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NOTICES:—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.

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The Chemistry of the Farm

THE series of speeches delivered at the opening, last week, of the I.C.I. experimental and research farm at Jealott's Hill, together with what was seen of the actual experimental work in progress, must have made many of the visitors conscious of how largely chemistry enters into every operation in farm work. Every farm, indeed, is a vast laboratory in which Nature is constantly producing new forms of food out of the elements in the soil, and even the rule-of-thumb farmer, trusting to accumulated stores of empirical knowledge, is unconsciously directing chemical processes of the most complicated character. The pure scientist who takes up farming would be very foolish indeed to despise the practical knowledge of the old agricultural hand, for that knowledge, derived direct from Nature, instead of from text-books, is itself scientific in the sense that it rests on the sure foundation of long and costly experiment—of trial and error. What he can do is to add to the knowledge already won accurate new knowledge about many things still unknown, to tabulate that knowledge in exact terms, and to establish on the farm, as in a works, what is known as scientific chemical control. This is the great mission on which I.C.I. has embarked in setting up this new agricultural research station.

No one could attend such a function as last Friday's without being impressed afresh with the importance of generous supplies of nitrogen in the most assimilable form. Someone, if our memory is correct, referred vaguely to a prophecy concerning the fixation of atmospheric nitrogen. The prophet was not Dr. Ludwig Mond, distinguished chemist though he was, but a former Marquis of Salisbury, who, known to history as a great statesman, was also essentially a scientist in the cast of his mind and in his use of words. The prediction was made in a speech at the jubilee dinner of the Chemical Society on February 25, 1891, in proposing "Prosperity to the Chemical Society" coupled with the name of Sir Lyon Playfair. "I am an agriculturist," said Lord Salisbury, "and a disciple of Gilbert and others. We compass sea and land in order to get manure to make our products grow. And what is manure? It is an impure form of the carbon and nitrogen in which those products are bathed in the circumambient air every day of their lives. I trust that the chemistry of the future may tell us why we have to go to Chile and why we cannot take them from the air around us. I believe that these and other problems are now approaching nearer to their solution than ever they were before." Anyone inspecting the samples of chemical fertiliser on view at Jealott's Hill would be able to appreciate how that remarkable prophecy of 38 years ago has been fulfilled. And the achievement was further recalled by the presence at the luncheon of two men closely associated with this success—the one Dr. Bosch, co-author of the Haber-Bosch process for the fixation of atmospheric nitrogen; the other Colonel Pollitt, the creator from the engineering side of the great synthetic nitrogen works at Billingham.

It was obvious at a glance to anyone familiar with farm life that Jealott's Hill is in its infancy. The plots and other parts are still in the rough, and time must pass before any large body of results is available. But the plans have been well laid, and the combination of laboratory research with field experiment may confidently be expected to produce results of immense value. Among the experiments on view many visitors were interested in the grass-drying plant, and in the concentrated forms in which the dried grass was shown. Much of the dried grass, as it lay in bowls, looked like very fine green tea. In fact, on taking up a handful, one found it to be almost grass dust. In some cases this was shown in the form of compressed cakes, a small cake of a few inches square representing in bulk a considerable quantity of untreated grass. In addition, there were shown a number of round "tabloids" of fine grass, about an inch thick and the size of half-a-crown, very silky to the touch, and very hard. A primary consideration is how the cost of these prepara-

tions compares with ordinary pasture grass. Another consideration is what the rather fastidious shorthorn heifer or Kerry Hill sheep will think of these condensed forms of their natural food from the palatable and digestive points of view. Here, as in so many other branches, there is room for experiments of a most interesting and important character. Definite results must not be expected in a moment, but in course of time one may expect Jealott's Hill to contribute knowledge of immense value to every aspect of home and imperial agriculture. Everyone, therefore, will join in wishing it well.

Reagents for Flotation Processes

ACCORDING to figures collected by the United States Bureau of Mines, a total of 50,073,450 tons of ore was treated in the United States by the flotation process in 1927. By far the greater portion, 40,881,768 tons, consisted of copper ores. The remainder was made up of complex lead-zinc, lead, zinc, copper-iron and miscellaneous ores. A total of 220,514,373 lb. of reagents was consumed in the treatment by flotation of all classes of ores. The bulk of this consumption was lime, of which 169,926,145 lb. were consumed. Pine oils constituted the greater portion of the frothing reagents used, accounting for 5,064,320 of a total of 6,583,151 lb. Appreciable amounts of cresols were also used. Of the oils used as collecting reagents, coal tar creosotes and coal tar made up 2,655,352 of a total of 3,508,993 lb. Other oils used as collecting reagents were wood-tar creosote, crude oils, and petroleum products, blast furnace oils, water-gas oils and tars, and miscellaneous and reconstructed oils. Ethyl xanthates and di-thio-phosphoric acids were used as collecting reagents to the extent of 3,319,639 lb. and 1,932,996 lb. respectively, and made up the great bulk of chemicals used for this purpose. Other chemicals used were higher xanthates (amyl and butyl), thio-carbanilide, alpha-naphthylamine, thio-ureas, and oleic acid. The acids and alkalis used in addition to the great consumption of lime were comprised of sulphuric acid, hydrochloric acid, sodium carbonate, sodium bicarbonate, sodium hydroxide, barium carbonate and cement. Other inorganic reagents used included sodium sulphide, calcium and barium sulphides, copper sulphate, cyanides, sodium sulphite, sodium silicate, zinc sulphate, sodium dichromate, trisodium phosphate, aluminium sulphate, sulphur, calcium chloride and sodium chloride. Some quantities of glue and starch were used as protective organic colloids.

A large and much-increased quantity of inorganic reagents other than acids or alkalis was used in 1927. They are classified under the headings of sulphidising, activating, depressing, and miscellaneous reagents. Sulphidising reagents and some depressing reagents, such as sodium silicate, give a strong alkaline reaction on hydrolysis (that is, on reaction with water). In other words, besides possessing certain sulphidising and depressing properties, they may be acting in place of alkali; they seem to have been used as such in some instances, as in the treatment of certain copper ores. Notable features were the rapid replacement of collecting oils by chemical collectors, the increased use of alkaline circuits (with the exception of an increase in the use of acid in some selective two-product copper-

iron flotation plants), and the very marked increase in depressing and activating reagents resulting from the expansion in selective two-product lead-zinc flotation operations.

The general trend of reagent consumption has led to the more extensive use of chemical collectors, the more widespread and judicious use of alkaline circuits, and greatly increased consumption of depressing reagents. The large increase in the consumption of copper sulphate can be ascribed to the erection of a number of plants for recovering zinc slimes and to the addition of zinc-floating sections to plants that previously made only a lead concentrate or a collective lead-zinc concentrate. Although no direct comparison has been possible, the metallurgical results obtained in 1927 appear to be a distinct improvement over those of the previous year. Further details are given in Serial 2,931, by A. M. Gaudin, copies of which may be obtained from the United States Bureau of Mines, Department of Commerce, Washington, D.C.

The Future of Safeguarding

MEMBERS of the chemical industry interested one way or the other in safeguarding duties will already have noted that the King's Speech, read on Tuesday, contains no reference to safeguarding. Nor was the Prime Minister, when asked a question on the subject, able to supply any definite information. What he did make clear was that "purely safeguarding duties" are not approved by the Government, who reserve the right to remove them when a practicable opportunity arises. At the same time, the Government recognise the inconvenience produced by changes in tariff policy, and will keep in mind both this and the revenue aspect of the question. The terms in which the Prime Minister defined the situation might be taken not to include "key industry" duties as distinct from "purely safeguarding duties," and nothing in his remarks gave any indication of opinion on the Dyestuffs Act which runs out early in 1931. The situation will be watched in the chemical industry with considerable interest, and an early declaration of policy will be welcomed.

The Calendar

July 8-13	Society of Chemical Industry: Annual Meeting.	Manchester.
8	Reception at Municipal College of Technology. 7.30 p.m.	
9	Meeting of Council. 9.45 a.m. Annual General Meeting. "Science and Labour." Dr. A. D. Little. 10.15 a.m.	
10	Annual Meeting: "The Human Factor in Industry." Professor T. H. Pear. "Process Development." Dr. Arthur D. Little. 10 a.m. Annual Dinner, at Midland Hotel. 7.45 p.m.	
11	Annual Meeting. Presentation of Society's Medal to Sir Richard Threlfall. 10 a.m. Reception by University of Manchester. Conferment of Degree of D.Sc. on Dr. Little and Mr. F. H. Carr. 8 p.m.	
16	Society of Chemical Industry (South Wales Section): Visit to works of J. S. Fry and Sons, Ltd., Somerdale, near Bristol.	Bristol.

Opening of the I.C.I. Agricultural Research Farm

The Part of Science in Food Production

The new agricultural research station, at Jealott's Hill, near Maidenhead, which is to serve as the Imperial Chemical Industries headquarters for agricultural research and experiment, was officially opened on Friday, June 28, by the Rt. Hon. J. H. Thomas, M.P. There was a very large and distinguished company present, and the subject of agricultural research was dealt with in a series of speeches.

The Objects of the Station

Foreword by Lord Melchett

GREAT BRITAIN has set an effective example to the world in the organisation of agricultural research. Other nations may spend more money in fostering such, but there is no country

crop production is affected by all the many soil and climatic factors on which the growth of plants depends. A proper understanding of the uses of fertilisers, therefore, necessitates a study of all these factors. In other words, it will be the duty of the Research Station to investigate soil fertility in all its aspects in both temperate and tropical countries, and in relation to all crops of economic importance.

One of the most important facts to be remembered is that it is intended that every agricultural investigation carried out at the Research Station shall be accompanied by a close study of all the relevant economic aspects. The economic investigations must ultimately be carried out on a commercial scale on the farm itself, so that the results will be readily available in concrete form.

Of the investigations carried out at the station, a number will be of a fundamental nature, and will find application in any part of the world. Much of the work, however, would relate primarily to English conditions, and especially to the actual conditions of soil and climate which obtain locally. To supplement the investigations of this category it will be necessary to carry out experimental work at centres widely dispersed over the whole of the British Isles, and equally important, in the overseas Colonies and Dominions, in the Indian Empire, and in the principal foreign countries, where fertilisers manufactured by Imperial Chemical Industries, Ltd., are already being used, or to which, within a short time, they can be supplied.



LORD MELCHETT, MR. J. H. THOMAS, M.P., AND SIR F. KEEBLE.

which has so efficiently covered the field of research in agriculture as Great Britain.

But, as all interested in agriculture know, there is still room in this country for the promotion of further research in agriculture. This applies not only to the demands of pure agricultural research, but also in those practical fields which apply new discoveries into the hard facts of practice, and which in time make them so generally known that they become, in due course, part of sound agricultural tradition. The new research station at Jealott's Hill, covering as it does both the fields of research and application, is destined to gain and retain the goodwill and appreciation of all concerned with agriculture.

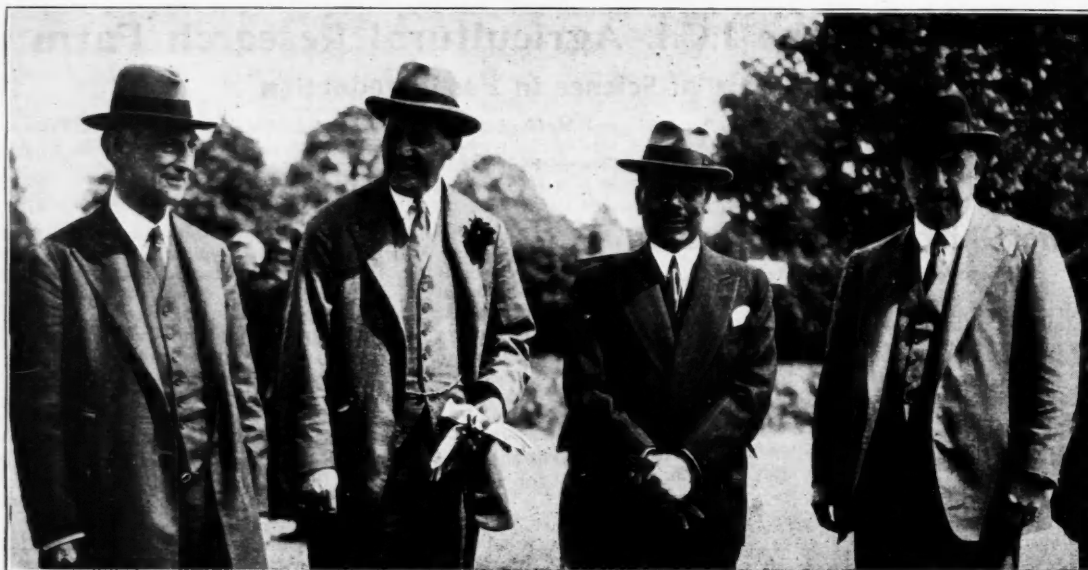
By this time it is almost a commonplace to say that the activities of Imperial Chemical Industries, Ltd., are world-wide. The company and its associates span the Empire. It is the intention of the company that Jealott's Hill shall become the headquarters of the research staff which has the Empire as its province. During recent years, the organisation of agriculture within the Empire has made most notable progress. Through the Jealott's Hill Research Station, Imperial Chemical Industries propose to accelerate that considerable progress which has already been made. For its aim will be to bring the resources of industry to supply the needs of agriculture and to add to the prosperity of the Empire.

Fertilisers made by Imperial Chemical Industries are being exported both to the Empire and to other parts of the world in ever-increasing quantities. They are being used to supply the needs of all kinds of crops. The influence of fertilisers on



MR. THOMAS UNLOCKING THE DOOR.

Jealott's Hill, therefore, has a twofold function: firstly, to aid in the scientific development of agriculture in Great Britain; and secondly, to assist the agricultural needs of the Empire. The staff of the Research Station, though for the most part located here, will also be equipped as an overseas expeditionary force, to go anywhere within the Empire or without at the call of agriculture.



LORD READING, LORD BIRKENHEAD, THE PREMIER OF EGYPT, AND SIR H. MCGOWAN.

The Opening Ceremony

The official opening took place under perfect conditions, and the experimental sections of the farm were inspected with great interest. The guests, the majority of whom had travelled from Paddington by special train, were received by Lord Melchett, and were afterwards entertained to luncheon in a marquee.

Jealott's Hill, which is situated in beautiful unspoilt country, is a farm of 435 acres, which has been equipped by I.C.I. with laboratories and the most modern agricultural equipment as the research headquarters for the farm fertiliser side of the concern. It is intended, as Lord Melchett explained, to be the centre of a world-wide organisation for the application of the latest scientific methods of agriculture. Experiments that are going on all over the Empire will be co-ordinated at Jealott's Hill—such, for instance, as experiments on grassland on a Yorkshire farm that are taking place at the same time as experiments on the manuring of cotton in Northern Rhodesia. In place of the usual farmhouse there is a well-designed building which contains the laboratories, where such work is undertaken as the examination of soils and fertilisers, the study of animal nutrition and biochemistry, botany, bacteriology, and general microbiology.

The farm itself, of which 160 acres are under the plough, is run like any other up-to-date farm, while it is also the scene of all kinds of scientific inquiry. Sheep, for example, are being subjected to tests as to the digestibility of grass which has been manured with nitrogen. Seventy-six acres of grassland have been set aside for trials on the production of "baby beef"—the small joints so much in demand in the household. There is a 17-acre field managed as a separate dairy, intended to demonstrate how a small holding, by the judicious use of fertilisers, can be made to carry a large herd of stock. The cutting and drying of grass by hot air is done in a special way. The grass is compressed into cakes, and samples were shown of compressed "tabloids" of fine grass.

The chief purpose of the farm, of course, is research into the value of various kinds of chemical manures, of which there was a large array in the store house. The root and cereal crops of the farm are treated with these fertilisers and the result studied. In one house were shown samples of the effect of different fertilisers upon the size of wheat, tomatoes and other plants grown in pots.

The work done on the improvement of grasslands is important. Results have been obtained in the improvement of the land which point to the possibility of changing, for the better, the heavy clay soil in this country (by the application of certain salts) as well as the alkali soils in Egypt. An organisation has been set up for making the results of this scientific

work available to farmers, many of whom visited the station. The old-fashioned farmer, with his traditional methods, must, it is urged, be succeeded by the man who is willing to utilise everything that science can discover. "Farm scientist" is the modern term.

The Luncheon

Among those who were present at the luncheon was Dr. Bosch, the chairman of the I.G., the German chemical and dyestuffs organisation, the joint inventor of the Haber-Bosch process of nitrogen fixation, the process by which most synthetic fertilisers are produced.

LORD MELCHETT, chairman of Imperial Chemical Industries, who presided at the luncheon, proposed the toast of "Agricultural Research at Home and Throughout the Empire." He said that one great quality of science and research was that it knew no boundaries. It was world-wide, international, interchangeable and co-operative among nations over the entire world and for all humanity. Agricultural skill was the foundation of human prosperity. The systematic investigation of agricultural conditions was still in its infancy. Jealott's Hill would be a nerve centre for competent observers all over the world. The fertiliser industry had to be lifted from the realm of faith and belief to the realm of scientific industry, and that was the object of the work they would do.

Once they envisaged the Empire as a vast unit, then the agricultural development of the Empire, combined with the industrial development we already possessed, afforded a union of such power, magnitude and self-contained importance that we could safely face any economic question of the future.

Mr. J. H. Thomas's Speech

MR. J. H. THOMAS, replying to the toast, said that he was delighted to be present because the occasion was one in which they could welcome the presence not only of late allies but also of late enemies—now, he hoped, all friends. He was also pleased to be present because he was told, on the authority of the chairman, that these new discoveries were going to find work for more people. It was indicative of the spirit in which everybody was trying to help the Government. He had a letter the other day from Ireland, and the lady said: "Dear Lord Privy Seal,—When King Edward visited Ireland for the first time, my late husband was chairman of the urban district council of Kingstown. He was called upon to buy a Court dress. It has never been worn since, but you can have it at a bargain price." (Laughter.)

After all, he was only concerned with the spirit of the thing. He would say, seriously, that he was delighted to be present as a member of the Government, because it was an indication to the outside world and to the Empire that, whatever the differences of political parties might be, the Government of

the day was as proud of its heritage as any party that had ever held office. Many of their difficulties and problems were brought about by ignorance and suspicion and failure to realise that the process of evolution always meant something better than that which preceded it. To-day they were prepared to place at the disposal of agricultural interests, not only in this country, but in the Empire, knowledge and science, not alone for mere material gain, but because they knew that, ultimately, it would benefit the Empire as a whole. They had in this country the men, the raw material, and the science. Do not let them get into the groove of thinking that capital was on one side and labour on the other. They were not opposite forces; brain and brawn must work together. It was because the laboratories and scientific resources of this great institution, with its world-wide ramifications, were doing good work that he was glad to be present.

The toast of "Jealott's Hill Agricultural Research Station" was proposed by Sir D. Milne-Watson and responded to by Sir Frederick Keeble.

The health of the Chairman was proposed by the Earl of Birkenhead.

The toast of "The Guests" was proposed by Sir Harry McGowan and the Marquis of Reading, and speeches in response were delivered by the Prime Minister of Egypt (Mohammed Mahmoud Pasha), Mr. John Garton (President of the National Farmers' Union) and Sir Daniel Hall.

Some of the Guests

Those who accepted invitations to be present included:—The Belgian Ambassador, the Swedish, the Greek, the Hungarian, the Latvian, the Norwegian, the Panama, the Persian, the Chilean, the Polish, the Nicaraguan, and the Monaco Ministers, the Duke of Montrose, the Prime Minister of Egypt, Sir Harry McGowan, Lord Reading, Lord Weir, Lord Colwyn, Mr. Henry Mond, M.P., Dr. G. C. Clayton, Mr. H. J. Mitchell, Mr. J. G. Nicholson, Colonel G. P. Pollitt, Mr. E. J. Solvay, Mr. J. H. Wadsworth, Lord Linlithgow, Dr. Bosch, Dr. Schmitz, Sir Archibald Weigall, Lord Hunsdon, Lord Stradbroke, Lord Downe, Lord Bledisloe, Sir David Milne-Watson, Dr. C. Addison, M.P., Mr. Ben Tillet, M.P., Mr. W. M. Citrine, Sir Frederick Keeble, Mr. John Garton, Sir Daniel Hall, Mr. L. S. Amery, M.P., Mr. Lennox Lee, Dr. Oster, Sir Alfred Bates, Sir John Farmer, Sir David Prain, Sir John Russell, Lord Cranworth, Lord Fielding, Sir Evan D. Jones, Lord O'Hagan, Sir Douglas Newton, M.P., Mr. Edward Strutt,

Sir William Mount, Lord Mayo, Mr. Christopher Turnor, Dr. A. E. Humphries, Sir Robert Robertson, Sir George Fuller, Sir Henry Barwell, Mr. W. C. Angwin, Mr. F. A. Pauline, Sir Francis Newton, Sir Dawson Bates, Mr. J. H. Dimond, Sir Louis Souchon, Sir Algernon Aspinall, M. Bruno, Dr. Eckstein, Sir Edwin Savill, Sir Henry Fairfax-Lucy, Sir William Vincent, Lieutenant-General Sir William Furse, Sir William Lobjoit, Major A. G. Church, M.P., Mr. Wickham Steed, Mr. H. J. Benyon, and Mr. G. Dallas, M.P.

Sultan's Visit to W. J. Bush and Co.'s Factories

On Friday, June 28, the Sultan of Zanzibar, accompanied by his son, Seyyid Abdulla, and Sheikh Seif bin Suleiman, paid a visit to the works of W. J. Bush and Co. The party were received by the chairman of the company, Mr. J. M. Bush, and the other directors, and were shown the process of distillation of cloves as carried out at the Hackney works. The party then motored over to the company's factory at Mitcham, where the clove oil is converted into vanillin. The chairman described the nature of the processes to the Sultan and showed samples of the intermediate products produced in the various stages of manufacture. The Sultan expressed himself as highly interested, particularly as Zanzibar produces about 90 per cent. of the world's production of cloves, and vanillin manufacturers throughout the world consume from about one-fourth to one-third of the average crop.

Dead Sea Salts: Claim by French Group

THE rights of rival concessionaires as to the extraction of mineral salts from the waters of the Dead Sea will, it is stated, form the subject of an arbitration hearing by the Court of International Justice at the Hague. A French group, which claims that it has a pre-war concession, has submitted its claim to the French Government, which in turn has asked the British Government to make the matter the subject of arbitration before the Hague Court. It is, however, thought that the claim made by the French group is not likely to affect seriously the rights of the British concessionaires. The French Government has already been informed by the British Government of the reasons for which the validity of the French group's claim cannot be admitted. At present it is not clear whether the claim is to be presented by the French Government or by the claimants themselves.



MR. H. MOND, M.P., LORD READING, MR. H. J. MITCHELL, SIR H. MCGOWAN, AND LORD MELCHETT.

Dr. A. D. and Mrs. Little

London Dinner and "At Home"

ON Friday evening, at the Forum Club, Grosvenor Place, a dinner was given by Professor Jocelyn Thorpe, President of the Chemical Society, and Mrs. Thorpe, in honour of Dr. A. D. Little, of New York, President of the Society of Chemical Industry, and Mrs. Little. In addition to Dr. and Mrs. Little and their hosts, there were present Mr. and Mrs. Briggs, Mr. and Mrs. F. H. Carr, Mr. and Mrs. Chapman, Dr. and Mrs. Cullen, Sir Alexander and Lady Gibb, Dr. Ellwood Hendrick, Sir Frank Heath, Sir Frederick and Lady Nathan, and Professor and Mrs. Smithells. Dr. and Mrs. Levinstein had intended being present, but, unfortunately, were recalled to Manchester to attend a meeting.

In the evening at their residence, 27, Chelsea Park Gardens, Professor Jocelyn and Mrs. Thorpe held an "At Home" to meet Dr. and Mrs. Little. The following were the guests:—Dr. and Mrs. Butler (Kew), Mr. and Mrs. Butler, Mrs. Campbell, Miss Carr, Dr. and Mrs. Cauti, Miss Cree, Miss Alice Cree, Mr. and Mrs. Cumming, Mrs. Drydell, Mr. and Mrs. Ernest Fass, Mr. and Mrs. Foster, Mr. and Mrs. C. J. Goodwin, Mr. and Mrs. Guest, Mr. F. E. Hamer, Professor and Mrs. Hinchley, Lady Holland, Mr. and Mrs. Hopkins, Mr. and Mrs. Kon, Mr. and Mrs. Lovell, Mrs. Mandelberg, Mr. and Mrs. Meakins, Professor and Mrs. MacBride, Dr. and Mrs. Miall, Mr. and Mrs. Miller, Mrs. Emile Mond, Sir Charles and Lady Parsons, Mr. and Mrs. Pilcher, Professor and Mrs. Philip, Mrs. Powell, Mr. and Mrs. Davidson Pratt, Miss Ridgeway, Sir Robert and Lady Robertson, Mrs. Rolands, Mrs. Schryver, Sir Russell and Lady Scott, Dr. and Mrs. Simonsen, Mr. Stevenson, Miss Threlfall, Miss Todd, Mr. and Mrs. Gordon Warren, Mr. Whiffen, Miss Whiteley, and Mrs. Whitham.

Among those who had accepted invitations, but were prevented from attending were Dr. and Mrs. Colgate, Dr. and Mrs. Jordan, Sir Thomas Holland, Mr. Emile Mond, Professor and Mrs. Robinson, Sir Richard Threlfall, and Mr. Whitham.

Institution of Chemical Engineers

New Elections

THE Institution of Chemical Engineers announces the following elections:—

Members: W. Bacon, technical consultant, London; J. W. Craggs, works manager and technical director, R. Bowran and Co., Ltd., Pelaw-on-Tyne; W. Thompson, head of chemical plant department, John Thompson (Dudley), Ltd.; N. T. M. Wilmshire, professor of chemistry, University of Western Australia; T. O. Wilton, managing director, Chemical Engineering and Wilton's Patent Furnace Co., Ltd., London.

Transferred to Membership: G. W. Himus, lecturer in fuel technology, Imperial College of Science and Technology, London.

Associate Members: J. K. Dickie, coke oven manager, Auchengiech Coke Oven and Gas Supply Plant, Glasgow; C. Forrester, professor of chemistry and assaying, Indian School of Mines, Dhanbad; T. J. Horgan, departmental manager and engineer, Edgar Allen and Co., Ltd., Sheffield; A. L. Julian, assistant manager, Callard and Co., Southfields.

Graduates: A. G. I. Anderson, assistant gas engineer and manager, Renfrew Gas Department; G. Conn, senior chemist, Stewarts and Lloyds, Coatbridge; J. Galloway, chemist, Glasgow Corporation Chemical Works; W. A. P. Hoskin, assistant to chief chemical engineer, Chemical Engineering and Wilton's Patent Furnace Co., London; F. A. Lyall, apprentice, Joseph Foster and Sons, Blackburn; W. A. H. Oswald, assistant to chief chemist, Anglo-American Oil Co., Ltd., London.

Transferred to Graduateship: C. S. Davies, deputy engineer and manager, Gas Department, Chesterfield; J. Mendelsohn, University of the Witwatersrand; W. E. Rees-Evans, draughtsman, Sundon Cement Works, Luton.

Students: W. F. Loates, assistant with A. Boake, Roberts and Co., Ltd., London; J. A. M. van Moll, student, Eindhoven, Holland.

Radium Merger Pending

£1,500,000 Company to be Floated

THE Radium Ore Mines, Ltd., the Australian Radium Corporation and the Radium Syndicate, Ltd., have issued a statement to the following effect:—

During the last few months, preparations have been going on for the establishment of a large public radium company which will constitute a merger of groups controlling radium-bearing properties in Cornwall, South Australia and Czechoslovakia. The merger, to be called English and Overseas Radium Merger, Ltd., will have a capital of £1,500,000, the largest part of which will be raised by a public issue in the autumn, while the remaining shares will be used for purchasing the various properties.

Options on Various Properties

The preparing syndicate has acquired options for the following:—(1) Freehold land and mining leases granted by the Australian Government and comprising the Mount Painter radium district mines, extraction plant, etc., from the Australian Radium Corporation, incorporated in Australia with a capital of £400,000. This corporation was formed in 1926 to take over various radium-producing areas being controlled by private companies, and it now possesses the rich radium-bearing lodes identified by Government geologists and Sir Douglas Mawson, of Adelaide University. The productive work of the corporation has been restrained through lack of capital; (2) The mining lease, mines, extraction plant, and other assets from Radium Ore Mines, Ltd., including numerous by-products, on Crow Hill, Cornwall; (3) About 217 acres of freehold land, partly on top of the Cornwall mines and partly adjoining them. On this estate a radium hydro will be erected; (4) About 280 acres of freehold land, mining leases, mines, plant, etc., at Weipert, Czechoslovakia, from the Silver Mining Union "Argenta," a co-operative miners' union. The property contains silver and uranium ore and adjoins the radium mines of Joachimov, in Czechoslovakia. In the event of this option being exercised, concentrated uranium ore only would be produced and shipped to this country for refinement in the English refining centre in Cornwall.

The merger will also take over the benefits accruing from negotiations carried on by the syndicate with the Czechoslovakian Government, commenced as early as the beginning of this year, when Mr. A. Kempler and Mr. A. H. Tysser, two members of the syndicate, went to Prague to negotiate for the exclusive selling rights for the world of the radium produced by the Government radium mines at Joachimov at specially favourable prices.

The Government is to be approached for an order for at least some of the radium which is to be purchased out of the Radium Fund.

Voluntary Liquidation of Chemical Merchants

THE creditors of Gray, Dell and Co., Ltd., of 16, St. Helens Place, London, chemical merchants, etc., were called together on Thursday, June 27, at the offices of Mr. L. A. Reddall, C.A., 1, Guildhall Chambers, Basinghall Street, E.C. The statement of affairs showed ranking liabilities of £10,377 1s. 8d., and assets of £612 18s. 6d., or a deficiency so far as the creditors were concerned of £9,764 3s. 2d. Mr. Reddall reported that the company was registered in March, 1926, with a nominal capital of £2,000, and shares of the face value of £1,500 were issued in equal proportion to Messrs. Gray and Dell as the consideration payable for services to be rendered and the connection which they possessed as shippers and importers. The accounts to March, 1927, showed a loss of £2,099. Up to that date, the business had been an ordinary shipping one, but it was then decided that the company should become the sole selling agents for another concern in Swansea. The accounts to March, 1928, showed a loss of £516, and during the following year there was a loss of £732. The company had advanced the Swansea concern sums totalling rather more than £7,000. A receiver had been appointed by the debenture holders in the Swansea company, and Mr. Reddall said that he understood that efforts were being made to sell that business as a going concern. It was decided to confirm the voluntary liquidation of the company, with Mr. Reddall as liquidator.

British Industries Fair Changes

Meeting the Needs of Exhibitors and Buyers

THE first application forms for space in the London Section of the British Industries Fair, which is to be held from February 17 to 28 next year in the specially reconstructed Olympia, Hammersmith, were issued by the Department of Overseas Trade on Saturday, June 22.

The move from the White City may be said to mark a new era in the history of the Fair. The London section was previously housed at the docks, the Victoria and Albert Museum, the Agricultural Hall, Crystal Palace, and latterly at the White City. "This will be the first time we have been able to hold the Fair in a building adapted for the particular needs of British Industries Fair exhibitors and buyers," an official of the Department of Overseas Trade states. "The work at Olympia is being hurried on. A new four-storey building for the Fair is being put up. It cannot be finished until the Fair of 1931, but two floors will be complete by February next, and by means of bridging the galleries of the existing buildings and other reconstruction work, there will be ready for the coming Fair a vast two-storey exhibition building, the first of its size and kind in the country. Owing to the impossibility of completing the new building in time, the available space next February will be less than that occupied at the White City this year—260,000 square feet as compared with 320,000—but the advantages of moving at once to the new site are considered by the Department and by its advisory committee of exhibitors to outweigh the reduction of space, which, moreover, will be only for the one year. In 1931, when the four-storey building is complete, there will be as much space as was used at the White City and ample provision can be made in subsequent years for the expected steady growth of the Fair.

The chief advantages of the new site are that the buildings are designed for the purpose; they are compact in arrangement so as to bring all sections into close touch with one another; and there will be three main entrances so as to give easy access to every section. These are all improvements which will make the work of the trade buyers easier than in the past. Secondly, the buildings are intended for use at any time of the year. The heating and ventilation, consequently, will leave little to be desired and, instead of the impossible task of improvising kitchens and restaurants for a fortnight each year, we shall have the service of a permanent catering organisation working with all the equipment and facilities of a first-class restaurant."

In view of the temporary contraction of space, application forms this year are being issued direct only to those manufacturers who exhibited in either 1927, 1928 or 1929, thus giving them a slight start over other manufacturers who, if they wish to exhibit, are invited to apply to the Department of Overseas Trade for the necessary forms. A letter accompanying the forms states that space will only be guaranteed to firms whose applications are received by July 20. The charge for space for the 1930 Fair will be at the rate of 3s. per square foot.

The trades exhibiting in the London section will be as before—that is to say, the lighter trades—while the engineering and other heavy trades will again be confined to the Birmingham section at Castle Bromwich. The Empire Marketing Board is again arranging a comprehensive exhibit of the food products of the home country, the Dominions and Colonies, as well as of raw materials from the Empire.

"C.A." Queries

We receive so many inquiries from readers as to technical, industrial, and other points, that we have decided to make a selection for publication. In cases where the answers are of general interest, they will be published; in others, the answers will simply be passed on to the inquirers. Readers are invited to supply information on the subjects of the queries:—

133. (*Chrome Ore*).—A correspondent is anxious to be put in touch with buyers of cargo lots of chrome ore containing 45 per cent. Cr_2O_3 .

Appointment Vacant

PHYSICAL CHEMIST for the Indian Lac Research Institute. Details on p. xxvi.

Dominion Tar and Chemical Co.

Preference Dividend and Income Tax

ON Monday, in the Chancery Division, Mr. Justice Eve had before him a summons in the winding-up of the Dominion Tar and Chemical Co., Ltd., which raised the question whether in distributing the assets of the company and in paying the arrears of preference dividends the liquidator ought to deduct income tax in such arrears, and if so at what rate.

The company was incorporated in 1903 with a nominal capital of £30,000 in £1 shares, which was subsequently increased from time to time. In 1924 it was resolved to increase capital to £750,000 by the creation of 450,000 new shares of £1 each, of which 150,000 were to be ordinary shares and the remainder preference shares, carrying 7 per cent., and to be entitled to priority as to the return of capital and the payment of all arrears of dividend whether earned or declared or not, down to the beginning of the winding up over all other shares. In 1929 it was resolved to wind up the company. The assets were realised and after providing for all the creditors and costs of liquidation, there was sufficient to repay the capital paid up on the preference shares, and also arrears of dividend, and have a sum for distribution among the ordinary shareholders, equal to three and a half times the amount paid up or credited as paid up on the ordinary shares. The sum represented the balance obtained on the sale of the undertaking to a Canadian company. The last dividend on the preference shares was paid in November, 1928, and the dividend was, therefore, in arrear until February, 1929, when the liquidation began. All income tax on the profits had been paid.

Mr. Cohen, K.C., for the preference shareholders, contended that no income tax should be deducted as the undivided profits had ceased to be profits and were only assets.

Mr. Beaumont, K.C., for the ordinary shareholders, contended that the preference shareholders ought not to get an advantage over the ordinary shareholders.

His lordship held that nothing ought to be deducted from the arrears of preference dividend in respect of income tax paid by the company.

£750 Damages for Chemical Merchant

BEFORE Mr. Justice Avory, in the King's Bench Division, on Thursday, June 27, Mr. Albert Edward Le Masurier, chemical merchant, of 1, Great Hermitage Street, London Docks, E., brought an action for damages for malicious prosecution against Mr. Edward Albert Old, musical director, and Mr. Solomon Meider, photographic enlarger, both of 154, Brondesbury Park, N.W. The plaintiff complained that in September last he was wrongfully charged, at the instigation of the defendants, with the theft of a 10s. note and two postal orders, and was arrested and taken to Lenan Street Police Station. When the case came before the magistrate at the Thames Police Court, Mr. Le Masurier was discharged. The plaintiff suggested that the charge was a trumped-up one to get him out of a photographic enlargement business in which he and Mr. Meider were interested and which was becoming successful. The defendants denied that they acted maliciously. His Lordship, after hearing the evidence, held that there was no reasonable and probable cause for the prosecution. The jury found that the defendants acted maliciously, and they awarded the plaintiff £750 damages. Judgment was entered accordingly.

Commercial Fertiliser Industry in Canada

THE Natural Resources Intelligence Service at Ottawa has just issued a memorandum dealing with the "Commercial Fertiliser Industry in Canada," with special reference to the utilisation of natural resources. The principal aim in view in publishing this memorandum is to put before the Canadian public the latest views of experts in world economics relative to the utilisation of commercial fertilisers, but also to show the amount of commercial fertiliser which Canada is now using, might use, and might also contribute to the world demand. Accompanying the memorandum is a specially prepared map showing the sources of the raw materials and the location of fertiliser manufacturing plants in the Dominion. Copies of the booklet will be obtainable shortly on application to the Secretary, Office of the High Commissioner of Canada, The Canadian Building, Trafalgar Square, London, S.W.1.

From Week to Week

MR. E. HOTHAM has been appointed to the board of Major and Co., Ltd., of Hull.

MRS. J. W. HINCHLEY has presented to the Institution of Chemical Engineers an eighteenth century carved chair, for use in the council room as the President's chair.

THE NORTH BRITISH ARTIFICIAL SILK Co. formally opened its mills at Jedburgh on Friday, June 28, in the presence of numerous guests.

EASTWOODS LEWES CEMENT, LTD., announce that they have acquired the whole of the business carried on at Lewes, Sussex, by the Lewes Portland Cement and Lime Co.

DR. C. B. MARSON, of Leeds University, has been appointed senior chemist under the Northern Coke Research Committee, in succession to Dr. W. T. K. Braunnholtz, who is now chief chemist to Pease and Partners.

APPLICATIONS are invited for three research scholarships in dyeing and colour chemistry, tenable at the Technical College, Huddersfield. Particulars and forms of application may be obtained from the Director of Education.

THE SELLING PRICES and conditions of sale for Chilean nitrate of soda in Great Britain and Ireland for July 1 to 13, 1929, announced by the Chilean Nitrate of Soda Producers' Association, are the same as those ruling for June, 1929.

MR. R. P. JENSEN, for many years a partner in the firm of Jensen, Lawson and Co., of 17, Monument Street, London, E.C.3, is retiring from business. The business of Jensen, Lawson and Co. will be carried on from July 1 by Mr. A. F. Lawson.

THE LONDON PORTION of the £3,000,000 Series "C" Bonds of the Potash Syndicate of Germany, amounting to £2,250,000, has, it is understood, been placed privately for settlement on July 1. The remaining £750,000 Bonds are being issued in Holland and Switzerland.

INTERNATIONAL PULVERISING AND GRINDING MACHINES (Parent) Corporation is completing arrangements for certain European agencies, excluding Great Britain and Ireland. An agreement has also been made with the Buffline Noiseless Gear Co., whereby that company will take over the whole of the sales and demonstrations for Great Britain.

THE LEAD PRODUCERS, after reviewing the statistics, which disclosed a satisfactory position, at their half-yearly meeting, decided that there was no necessity to take any action to reduce output. It was agreed to continue for six months the arrangement made in September last imposing a restriction upon output in the event of any adverse change in the situation.

COURTAULDS, LTD., after long negotiations, have decided to erect a works on the outskirts of Preston "when the demands of the trade justify them doing so." When completed, the works are expected to employ about 5,000 operatives. Preston Corporation will spend about £65,000 on sewerage works to deal with the 3,500,000 gallons of effluent daily from the works. The site is adjacent to the beauty spot on the Ribble known as Red Scar.

LORD MELCHETT entertained the following guests at dinner on Tuesday night at 35, Lowndes Square, London, to meet the Egyptian Prime Minister: Sir Austen Chamberlain, Mr. Amery, the Egyptian Minister, Sir Harry McGowan, Sir Hugo Hirst, Sir Ronald Lindsay, Sir John Norton-Griffiths, Sir David Milne-Watson, Sir Frederick Keeble, Sir Frank Meyer, the Hon. Henry Mond, Mr. Frederick C. Goodenough, Mr. Lennox Lee, Mr. Wickham Steed, Mr. Percy Stout, Ahmed Rassim, and Mr. Conway Davies.

THE I.G. has acquired the rights in a new tanning process, invented by the Duisburg firm of Ernst Luckhaus, which is claimed to possess the substantial advantage that it reduces the period of treatment to not more than eight to twelve days. At the same time, it is claimed that improvements in the quality of the product are achieved by an accompanying reduction of strain in the treatment of the material. Technical details as to the process are not available. The interest of the I.G. in the process is that it permits a larger proportion of synthetic tanning material to be used than in other processes. Thirty per cent. of synthetic materials can be used under the Luckhaus method, and successful experiments have been made with percentages up to 55.

THE BIRMINGHAM CORPORATION GAS DEPARTMENT, in a report to the City Council, state that the expenditure last year amounted to rather more than two million pounds, and that a reduction of £139,000 was effected owing to lower costs of manufacture, distribution and management. The amount of gas sold last year constituted a record in the history of the department, being 13,946,200,100 cubic feet, or 365 million more than in 1928. The accounts reveal a substantial reduction in income from residual products—in tar, in coke and other residuals. The following interesting statistics of the operations of the department are contained in the report:—Coal carbonised, 827,605 tons; gas oil used, 1,522,482 gallons; residuals sold—coke and breeze, £393,081; tar, £186,749; ammoniacal liquor, £17,317. The Department proposes to carry out schemes of reconstruction and extension at a cost of £325,000.

MR. L. W. BLUNDELL has joined the Beckton works of the Gas Light and Coke Co.

RUTHS STEAM STORAGE have obtained contracts for steam accumulator installations from Canning and Wildblood and from Price's Patent Candle Co.

THE YORKSHIRE ARTIFICIAL SILK Co.'s petition for an order for compulsory liquidation was granted by Mr. Justice Eve, in the Chancery Division, on Monday.

PLANS for three factory buildings for British Bemberg, Ltd., who will employ 5,000 people in manufacturing artificial silk, have been approved by Doncaster Corporation.

EXPORTS OF INDIGO FROM INDIA during April amounted to 105 cwt., as compared with 40 cwt. and 79 cwt. exported during the months of April, 1928 and 1927, respectively.

THE GLIDDEN Co. (of the United States) has obtained from the legislature of the State of Maryland the right, subject to certain restrictions, to dredge in Chesapeake Bay for titanium oxide.

THE LIBRARY of the Chemical Society will be closed for stock-taking from Monday, August 5, until Saturday, August 17, inclusive, and will close each evening at 5 o'clock from August 19 to September 14.

MR. D. M. HUGHES has been appointed works manager of British Benzol and Coal Distillation, Ltd., for whom the Woodall-Duckham Co. is installing a Becker coke-oven and by-product plant at Trethomas, Newport (Mon.).

SULPHUR IN POWDER FORM is produced in Poland to the extent of 800 tons a year. The quantity used in the country is below this, and although the producers are urging its use in insecticides, the quality is so poor that consumers prefer imported material.

THE GRAESSER-MONSANTO CHEMICAL WORKS, LTD., have recently taken over the methyl salicylate part of the business of K. B. Mavlankar. They have also acquired the saccharin interests of the British Saccharin Manufacturing Co., Ltd., of Baxenden, Lancs, makers of fine saccharin.

MAJOR F. A. FREETH, D.Sc., F.R.S., late manager of the research department of Brunner, Mond and Co., Ltd., Winnington, and Mr. W. Rintoul, F.I.C., manager of the research department of Nobel's Explosives Co., Ltd., Ardeer, have been appointed joint research managers to Imperial Chemical Industries, Ltd., Millbank, London, S.W.

FURFURAL is manufactured in the United States to the extent of 500,000 lb. per annum. The price is 10-17 cents a pound, as compared with a price of 30 dollars per pound before 1922, when it was a chemical curiosity. In that year the U.S. Department of Agriculture began to investigate its technical production from agricultural waste products.

H.M. VICE CONSUL AT LIMA (Mr. R. C. Stevenson) has forwarded to the Department of Overseas Trade a memorandum on the market for paints, varnishes, etc., in Peru. British firms desirous of receiving a copy of this memorandum should apply to the Department of Overseas Trade, 35, Old Queen Street, London, S.W.1. Reference No. B.X. 5439 should be quoted.

UNIVERSITY NEWS:—*Edinburgh*: The honorary degree of LL.D. was conferred on Sir James Walker (professor-emeritus of chemistry in the University), and on Dr. A. P. Laurie (formerly principal of the Heriot-Watt College), at a graduation ceremony held on Friday, June 28.—*Cambridge*: The following reappointments have been made—F. W. Dootson, University lecturer in chemistry; R. G. W. Norrish, University demonstrator in chemistry; H. E. Woodman, University demonstrator in agricultural chemistry.

DR. W. H. GEORGE, assistant lecturer in physics in Leeds University, has been elected to the Sorby Fellowship of Sheffield University. The Fellowship, founded for research purposes by the late Dr. H. C. Sorby, is awarded every five years. The retiring Fellow is Dr. N. K. Adam, who has carried out numerous investigations on the properties of surfaces. Dr. George will work on the elucidation of crystal structure by X-rays. Among former holders of the Fellowship is Professor J. F. Thorpe, president of the Chemical Society.

REPRESENTATIVES from the Ministry of Transport, the Ministry of Agriculture, the Fuel Research Board, the Mineral Resources Department of the Imperial Institute, the Committee of Imperial Defence, the War Office, the Institute of Fuel, the Royal Automobile Club, the National Farmers' Union, and many important engineering and coal concerns, as well as many other important bodies, have witnessed a well-known make of farm tractor at work at Belmore Farm, Hayes, Middlesex, ploughing with the petrol or paraffin tank entirely dismantled and a coke-filled gas generator placed vertically between the two wheels instead. The device has been specially designed by the Parker Producer Gas Plant Co., of 62, Conduit Street, London, W.

Obituary

PROFESSOR RICHARD LORENZ, of Frankfurt-on-Main, on June 23, aged 66.

PROFESSOR L. LINDET, president of the Société des Experts Chimistes de France, recently, in Paris, aged 72.

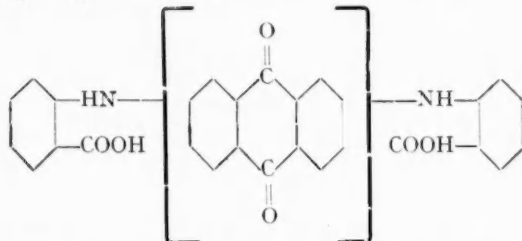
Patent Literature

The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each.

Abstracts of Complete Specifications

- 312,678. ORTHO-ORTHO¹-DICARBOXYL DIPHENYL DIAMINO ANTHRAQUINONES, PROCESS OF PREPARING. W. L. Rintelman, 381, Park Place, Milwaukee, Wis., U.S.A., and R. J. Goodrich, 233, Fairview Avenue, South Milwaukee, Wis., U.S.A. Application date, January 31, 1928.

Ortho-ortho¹-dicarboxyl-diphenyl-diamino-anthraquinones having the general formula



have been prepared by condensing a halogen anthraquinone with anthranilic acid in the presence of a copper catalyst and nitro-benzene, but the anthranilic acid is relatively unstable under the reaction conditions. In this invention, the condensation is effected in an alcohol boiling below 100° C., in the presence of copper or a copper salt. In an example, a dihalogen-anthraquinone is heated under pressure to 135°–140° C. with methyl alcohol, the potassium salt of anthranilic acid, and copper acetate.

- 312,716. ACETALDEHYDE FROM ACETYLENE OR GASEOUS MIXTURES CONTAINING IT, PRODUCTION OF. J. Y. Johnson, London. From I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. Application date, March 10, 1928.

In the production of acetaldehyde from acetylene by the use of mercury compounds, the activity of the catalyst is decreased by the formation of resinous matter. In this invention, the formation of resinous matter is avoided by the use of a catalyst consisting of a solution of an acid alkali metal sulphate, and one or more compounds of the heavy base metals of the first and eighth group of the periodic system, e.g., copper or iron. The temperature is increased gradually from 60° to 105° C. and the pressure may be up to 10 atmospheres. An absorption of the acetylene of 95–98 per cent. is obtained.

- 312,717. HYDROCARBONS, PRODUCTION OF. J. Y. Johnson, London. From I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. Application date, March 10, 1928.

Hydrocarbons are produced from oxides of carbon and hydrogen or methane at an increased temperature and pressure in the presence of catalysts. In order to obtain liquid hydrocarbons it is necessary to employ a catalyst consisting of a metal of the eighth group and an amount of alkali compound containing 0.4–0.6 per cent. by weight of alkali metal relatively to the metal of the eighth group. In an example of the preparation of a catalyst, ferric oxide is precipitated with ammonia, and the correct amount of alkali compound added. The metal should be very finely divided and may be deposited on porous carriers. The pressure may be 20–1,000 atmospheres. Several examples are given of catalysts containing iron, cobalt, silver, and other metals, with additions of alkali, and the use of these catalysts in the preparation of liquid hydrocarbons.

- 312,726. ALUMINIUM SULPHATE, PRODUCTION OF. G. F. Horsley, Norton Hall, The Green, Norton-on-Tees, Durham, and Imperial Chemical Industries, Ltd., Imperial Chemical House, Millbank, London, S.W.1. Application date, March 19, 1928.

Bauxite, clay, and other minerals containing aluminium and iron are treated in a rotary kiln with sulphur trioxide, or sulphur dioxide and oxygen, in the presence of a catalyst, for

the conversion of sulphur dioxide into sulphur trioxide. The iron oxide present may serve as a catalyst, or catalysts may be added. The products are a mixture of ferric sulphate and aluminium sulphate, or ferric oxide and aluminium sulphate. The temperature may be intermediate between the decomposition temperature of ferric sulphate and aluminium sulphate, having regard to the partial pressure of sulphur trioxide, e.g., 600°–750° C. The product is leached with water, and aluminium sulphate free from iron is obtained. Alternatively, the temperature may be 450° C. to form ferric sulphate at the most favourable temperature, and the ferric sulphate may then be decomposed by heating to 650° C.

- 312,732. ALKALI HYDROXIDES, PRODUCTION OF. L. P. Curtin, 29, Jerseyville Avenue, Freehold, N.J., U.S.A. Application date, March 20, 1928.

Sodium chloride is treated with sulphuric acid to obtain sodium sulphate and hydrochloric acid. Part of the sodium sulphate is treated with lead sulphide to obtain sodium sulphide, sulphur dioxide, and metallic lead, and another part of the sodium sulphate is reduced by means of coke to sodium sulphide. The metallic lead is oxidised to litharge, and the sulphur dioxide is oxidised to sulphur trioxide for use again. The litharge is suspended in water or in an aqueous solution of caustic alkali and strongly agitated, while sodium sulphide solution is added at such a rate relatively to the velocity of the action as to avoid any substantial accumulation of sulphide ions in solution. The products of this reaction are lead sulphide and caustic soda. The raw materials employed are thus sodium chloride and coke, all other substances being regenerated in the process, while the products are caustic soda and hydrochloric acid.

- 312,741. SYNTHETIC RUBBER, PROCESS FOR THE PRODUCTION OF. E. Kleiber, 4, via ai Prati, Lugano, and P. Gilardi, 1, Riva Albertoli, Lugano, Switzerland. Application date, March 26, 1928.

Petroleum is treated with nitric acid or sodium peroxide in the presence of soda-lime or sodium acetate, or with another oxidising agent. The liquid is neutralised and repeatedly distilled over colophony. The distillate is treated with dilute alkali and allowed to stand, when three layers are formed. The two upper layers are treated with glacial acetic acid or formaldehyde, together with raw rubber as a catalyst. The mixture is heated to 60° C., and a syrupy substance is obtained from which an elastic substance can be precipitated with acetone or alcohol. This substance can be vulcanised and used as a substitute for rubber.

- 312,769. DESULPHURIZATION OF GASES. J. Y. Johnson, London. From I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. Application date, April 26, 1928.

The object is to desulphurise water gas, producer gas, etc., while hot, and laden with flue dust, combustion residues, coal particles, etc. This is done by cooling the gas to 100°–200° C. and oxygen or air sufficient for the complete oxidation of the sulphur compounds is added. The amount of oxygen varies between the stoichiometrical amount necessary for the oxidation of the sulphur compounds to sulphur, and an excess of about 100 per cent. If ammonia is not present, about 0.1 per cent. is added to act as a catalyst, and the dust which is present also acts as a catalyst. Any excess of dust above that necessary for the catalytic action may be removed by preliminary purification. The sulphur-bearing dust may be recovered by a mechanical or electrostatic separator, and it may be roasted or otherwise treated to utilise the sulphur.

- 312,837. RECOVERY AND PURIFICATION OF ANTHRAQUINONE. Imperial Chemical Industries, Ltd., Imperial Chemical House, Millbank, S.W.1, A. Davidson and A. Shepherdson, Crumpsall Vale Chemical Works, Blackley, Manchester, and J. Thomas, Murrell Hill Works, Carlisle. Application date, June 28, 1928.

Anthraquinone is recovered from anthraquinone- α -sulphonic acids by treating them in the presence of sulphuric acid of

80 per cent. strength and at a temperature of 180° C., and in the presence of mercury salts, with a current of superheated steam. This assists the hydrolysis and distills off the anthraquinone, which is condensed.

NOTE.—Abstracts of the following specifications, which are now accepted, appeared in THE CHEMICAL AGE when they became open to inspection under the International Convention:—281,307 (Selden Co.) relating to catalytic oxidation of organic compounds, see Vol. XVIII, p. 104; 287,095 (I.G. Farbenindustrie Akt.-Ges.) relating to condensation products from urea, thiourea, etc., and an alcohol or ketone, see Vol. XVIII, p. 495; 290,230 (I.G. Farbenindustrie Akt.-Ges.) relating to yellow monoazo dyestuffs, see Vol. XIX, p. 57; 290,649 (J. D. Riedel Akt.-Ges.) relating to aromatic aldehydes, see Vol. XIX, p. 58; 306,884 (Selden Co.) relating to catalytically removing oxygen- or hydrogen-containing groups from organic compounds, see Vol. XX, p. 432.

International Specifications not yet Accepted

310,757. DYE INTERMEDIATES. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, April 28, 1928. Addition to 288,986. (See THE CHEMICAL AGE, Vol. XVIII, p. 581.)

To obtain *o*-carboxyamido-arylthioglycollic acids, *o*-cyan-aryl-thioglycollic acids are hydrolysed by means of an aromatic sulphonic acid, the technical mixtures of naphthalene or phenol sulphonic acids which contain small quantities of free sulphuric acid being particularly suitable. The preparation of 4-methoxy-1-carboxyamido-benzene-2-thioglycollic acid and 4-ethoxy-1-carboxyamido-benzene-2-thioglycollic acid is described.

310,815. THIAZOLE DERIVATIVES. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, April 30, 1928.

A 2-hydroxy- or a 2-mercaptobenzo-thiazole is treated with phosphorus pentachloride, pentabromide, oxychloride, or sulphochloride to obtain 2-halogen-benzothiazoles and their homologues and substitution products, which are dye intermediates, insecticides, vulcanising accelerators, and pharmaceutical products. Examples are given.

310,891. DYES. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, May 2, 1928.

Halogenated-3 : 4 : 8 : 9-dibenzpyrene-5 : 10-quinones are treated with an alkaline condensing agent such as sodium hypochlorite to obtain vat dyes of enhanced clearness and fastness. Some examples are given.

310,949. TITANIC HYDROXIDE. J. Blumenfeld, 129, Avenue des Champs Elysées, Paris. (Assignee of Verein für Chemische und Metallurgische Produktion, Karlsbad, Czechoslovakia.) International Convention date, May 5, 1928.

Titanium salt solutions are hydrolysed by heating with the addition of a small amount of a liquor containing nuclei of titanic hydroxide which are still capable of being dispersed wholly or partly by dispersing agents into an apparently homogeneous solution. To obtain the liquor, a titanium salt of low acidity is hydrolyzed under heat with subsequent cooling to stabilise the nuclei.

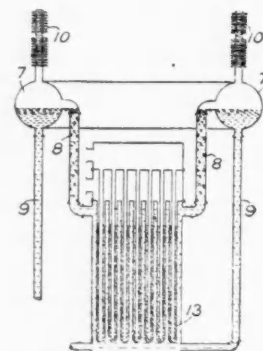
310,964. DICHLORETHYLENE. I.G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, May 5, 1928.

A mixture of acetylene and chlorine is continuously mixed with a current of gas containing excess of acetylene, and circulated over active carbon at 40° C., the temperature being regulated by the fresh chlorine and acetylene added. Pure trans-dichlor-ethylene is obtained.

310,956. CATALYTIC APPARATUS. Selden Co., McCartney Street, Pittsburg, U.S.A. (Assignees of A. O. Jaeger, 9, Grandview Avenue, Crafton, Pa., U.S.A.) International Convention date, May 4, 1928.

In an apparatus for exothermic catalytic gas reactions, the catalyst 13 is placed in the space between two tubes and is

cooled on the inside by the reaction gas and on the outside by a bath of mercury or mercury alloy. The liquid rises through pipes 8 to a space 7 where the pressure is lower, and where it



310,956

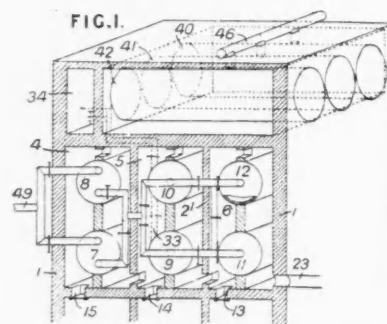
evaporates. A reflux condenser 10 is provided, and the cooled liquid returns by pipe 9 to the bath. Circulation may be assisted by heating the rising pipes 8.

310,871. SECONDARY AROMATIC AMINES. Goodyear Tire and Rubber Co., 1144, East Market Street, Akron, Ohio, U.S.A. (Assignees of A. M. Clifford, 649, Honodle Avenue, Akron, Ohio, U.S.A.) International Convention date, May 2, 1928.

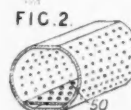
β -naphthol is heated in an autoclave to 300°-325° C. with anhydrous liquid ammonia to obtain β - β '-dinaphthylamine and a little β -naphthylamine.

310,97 SULPHUR AND CARBON BISULPHIDE. G. Jakovamuri, 3, Rue des Trois Soeurs, Gagny, France. International Convention date, May 4, 1928.

Chamber 1 is divided into compartments 4, 5, 6 and heated by combustion gases admitted through openings 13, 14, 15 and exhausted through opening 23. Sulphur is charged into the retorts 9, 10, and the vapour passes into retorts 7, 8, which are provided with perforated liners 50 containing coal. The



310,972



sulphur vapour is delivered below the perforated partition at the bottom, and the resulting carbon bisulphide is withdrawn by a pipe 49 to a condenser. To obtain roll sulphur, the vapour is passed into retorts 11, 12 heated to 130°-140° C. and the liquid sulphur is discharged at the base. To obtain flowers of sulphur, all the retorts may contain sulphur and the vapour passes by pipe 33 to chamber 34 and thence to cooled cylinders 40, 41, 42. To obtain sulphur dioxide, air is admitted to the retorts and the combustion products drawn off at 46.

LATEST NOTIFICATIONS.

- 313,912. Manufacture of stable polymerisation products from vinyl esters. I.G. Farbenindustrie Akt.-Ges. June 19, 1928.
 314,060. Process for the manufacture of carbon bisulphide. Oehme, H., and Chemische Fabrik Kalk Ges. June 23, 1928.
 313,879. Manufacture and production of viscous oils and hydrocarbon products of low boiling-point. I.G. Farbenindustrie Akt.-Ges. June 18, 1928.
 314,068. Process for colouring paper. I.G. Farbenindustrie Akt.-Ges. June 23, 1928.
 314,020. Manufacture of β -anthraquinone-carboxylic acids and esters thereof. I.G. Farbenindustrie Akt.-Ges. June 21, 1928.
 313,919. Process for the manufacture of rubber derivatives. I.G. Farbenindustrie Akt.-Ges. June 19, 1928.
 314,075. Production of ferric oxide. Sulphur and Smelting Corporation. June 22, 1928.
 313,887. Manufacture of vat dyestuffs. I.G. Farbenindustrie Akt.-Ges. June 18, 1928.
 313,921. Manufacture of articles from viscose. I.G. Farbenindustrie Akt.-Ges. June 19, 1928.
 313,927. Manufacture of yellow mono-azo dyestuffs, and material dyed therewith. I.G. Farbenindustrie Akt.-Ges. June 19, 1928.
 313,973. Manufacture of metallized sheets. I.G. Farbenindustrie Akt.-Ges. June 20, 1928.
 314,028. Manufacture of ortho-amino-carboxylic acid esters of the anthraquinone series. I.G. Farbenindustrie Akt.-Ges. June 21, 1928.

Specifications Accepted with Date of Application

- 287,093. Organic arsenic preparations and the application thereof as seed grain immunizing media. Manufacture of. I.G. Farbenindustrie Akt.-Ges. March 14, 1927.
 287,179. Condensation products of the benzodiazine series. Manufacture of. J. Y. Johnson. (I.G. Farbenindustrie Akt.-Ges.) March 18, 1927.
 294,626. Aqueous acetic acid. Process for concentrating. I.G. Farbenindustrie Akt.-Ges. July 29, 1927. Addition to 284,588.
 301,491 and 301,799. Catalytic apparatus. Selden Co. December 2 and 5, 1927.
 304,585. Metal alcoholates. Manufacture of. A. Wacker Ges. für Elektro-Chemische Industrie Ges. January 21, 1928.
 308,566. Di-sodium phosphate having two molecules of water of crystallisation. Production of. T. Benckiser, A. Reimann sen., and A. Reimann, jun. (Trading as J. A. Benckiser (Firm of)). March 23, 1928.
 313,418. Aliphatic anhydrides. Manufacture of. H. Dreyfus. January 10, 1928.
 313,421. Condensation products from alicyclic ring-ketones. Manufacture of. A. Carpmæl. (I.G. Farbenindustrie Akt.-Ges.) February 7, 1928.
 313,426. Organic dehydration reactions. J. Y. Johnson. (I.G. Farbenindustrie Akt.-Ges.) March 8, 1928.
 313,466. Aldol and crotonaldehyde. Production of. G. F. Horsley, and Imperial Chemical Industries, Ltd. February 6th, 1928.
 313,467. Catalytic conversion of mixtures of carbon monoxide and hydrogen into valuable organic compounds containing more than one carbon atom in the molecule. J. Y. Johnson. (I.G. Farbenindustrie Akt.-Ges.) February 9, 1928. Addition to 266,405.
 313,471. Alloys. Sir R. A. Hadfield. March 10, 1928.
 313,541. Complex metallic salts. Manufacture of. A. Carpmæl. (I.G. Farbenindustrie Akt.-Ges.) February 14, 1928.
 313,651. Aliphatic acids. Manufacture of. H. Dreyfus. March 16, 1928.
 313,652. Conversion of salts, more especially fertilizers and the like, into globular or similar-shaped bodies. J. Y. Johnson. (I.G. Farbenindustrie Akt.-Ges.) March 16, 1928.
 313,756. Gaseous and low boiling olefines and diolefines from bituminous coal, tars, mineral oils, and the like. Process of obtaining. J. Y. Johnson. (I.G. Farbenindustrie Akt.-Ges.) June 23, 1928. Addition to 268,599.
 313,797. Impurities in molten metals. Method and apparatus for the reduction of. L. Jones. August 1, 1928.
 309,408. Partitions for separating the electrolytic products in the fusion electrolysis of chlorides, particularly of magnesium. I.G. Farbenindustrie Akt.-Ges. December 23, 1927.

Applications for Patents

- Brooks, R., and Cockledge, H. E. Production of ammonium chloride. 19,738. June 27.
 Carpmæl, A., and I.G. Farbenindustrie Akt.-Ges. Manufacture of oxygenated organic compounds. 19,944. June 28.
 — Dyeing artificial silk from regenerated cellulose. 19,945. June 28.
 — Manufacture of artificial rubbers. 20,042. June 29.
 Dartmoor China Clay Co., Ltd. Treatment of carbonaceous minerals, etc. 19,537. June 25.

- Durand et Huguenin Soc. Anon. Production of fast dyeings, etc., on fibrous goods, etc. 19,503. June 25. (Germany, June 25, 1928.)
 Einstein's Electro Chemical Process, Ltd. Holders for work in electrolytic baths. 19,897. June 28.
 Ellis, G. H., and Olpin, H. C. Coloration of materials. 19,499, 19,500. June 25.
 Groves, W. W., and Soc. of Chemical Industry in Basle. Manufacture of dyestuffs. 19,502. June 25.
 Hutchinson, W. K. Separation of volatile substances from liquids. 19,371. June 24.
 I.G. Farbenindustrie Akt.-Ges. and Johnson, J. Y. Manufacture of low temperature carbonization tar. 19,384. June 24.
 — Manufacture of metal carbonyls. 19,385. June 24.
 — Treatment of mica, etc. 19,931. June 28.
 — Separation of mixtures of secondary, etc., amines. 19,932. June 28.
 — Combustion engines. 19,933, 19,934. June 28.
 — Production of liquid hydrocarbons. 19,935. June 28.
 — Production of foam. 19,936. June 28.
 I.G. Farbenindustrie Akt.-Ges. Lens system for film projectors. 19,356. June 24. (Germany, July 16, 1928.)
 — Process of preparing α -para-hydroxyphenyl- β -methylamino-propanol. 19,795. June 27. (Germany, June 27, 1928.)
 — Manufacture of polymerization products from vinyl esters. 19,797. June 27. (Germany, November 16, 1928.)
 — Manufacture of tri-substituted thioureas. 19,801. (June 27, Germany, June 30, 1928.)
 — Lens system for film projectors. 19,927, 19,929. June 28. (Germany, August 15, 1928.)
 Imperial Chemical Industries, Ltd. Salt bath, etc., furnace. 19,478. June 25.
 — Production of ammonium chloride. 19,738. June 27.
 — Electric-arc welding. 19,802. June 27.
 — Gunpowder squibs. 19,807. June 27.
 — Colouring cellulose ethers, etc. 20,058. June 29.
 Imperial Chemical Industries, Ltd., and Wyler, M. Manufacture of intermediates. 19,811. June 27.
 — Dyestuffs. 19,812. June 27.
 Johnson, J. Y., and Ziegler, K. Production of polymerisation products, etc., from diolefines. 19,789. June 27.
 Kali-Chemie Akt.-Ges. Production of barium sulphide. 19,687. June 26. (Germany, August 7, 1928.)
 Kárpáti, J. Manufacture of light hydrocarbons. 19,543. June 25.
 Klanfield, A. Production of frozen carbon dioxide. 20,023. June 29.
 Lamb, A. B. Manufacture of urea. 19,747. June 27.
 — Urea containing fertilizers. 19,748. June 27.
 — Synthesis of urea. 19,750. June 27. (United States, June 27, 1928.)
 Newport Co. Preparation of indanthrone dyestuffs. 19,979. June 28. (United States, July 2, 1928.)
 — Preparation of 2-amino-3-substituted-10-anthrone, etc. 19,980. June 28. (United States, July 2, 1928.)
 Rohm and Haas Akt.-Ges. Production of condensation products from glycerine chlorhydrines. 19,673. June 26. (Switzerland, June 27, 1928.)
 Schröter, J. Production of ferrihydrides. 19,964. June 28. (Germany, July 5, 1928.)
 Verhave, T. H. Preparation of 2:3 butyleneglycol. 19,504. June 25. (Holland, July 10, 1928.)
 — Preparation of acetyl methyl carbinol and diacetyl. 19,505. June 25. (Holland, July 10, 1928.)
 — Preparation of 2:3 butyleneglycol. 19,663. June 26.
 — Preparation of acetyl methyl carbinol, etc. 19,664. June 26.

I.G. General Meeting

PRESIDING at the annual meeting of the I.G. Farbenindustrie A.-G., at Frankfurt, on Saturday, June 22, Dr. Duisberg stated that during 1928 the company spent 348 million marks on wages and salaries; 18.5 million marks were spent on social services, and 28.7 million marks on welfare work (including pensions). In spite of the poor economic conditions obtaining in Germany, the development of the I.G. continued favourably. Work on the hydrogenation of coal and tar continued according to plan. The production of petrol would be increased during 1929. The experimental plant erected by the Standard Oil Co. of New Jersey, for the treatment of distillation and cracking residues and asphaltic and high-sulphur oils according to the I.G. methods, had been brought successfully into action, and by the end of 1929 a full-scale plant should be in operation. Negotiations with the Standard Oil Co. of New Jersey had advanced so far that an agreement should result. In the discussion which followed Dr. Duisberg's speech, complaints were made by some shareholders that the company's publicity was inefficient.

Weekly Prices of British Chemical Products

The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.

General Heavy Chemicals

ACID ACETIC, 40% TECH.—£19 per ton.
 ACID BORIC, COMMERCIAL.—Crystal, £30 per ton; powder, £32 per ton; extra fine powder, £34 per ton.
 ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to purity, strength and locality.
 ACID NITRIC, 80° Tw.—£21 10s. to £27 per ton, makers' works, according to district and quality.
 ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations; 140° Tw., Crude Acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.
 AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts.
 BISULPHITE OF LIME.—£7 10s. per ton, f.o.r. London, packages free.
 BLEACHING POWDER.—Spot, £9 10s. per ton d/d; Contract, £8 10s. per ton d/d, 4-ton lots.
 BORAX, COMMERCIAL.—Crystals, £19 10s. to £20 per ton; granulated, £19 per ton; powder, £21 per ton. (Packed in 2 cwt. bags carriage paid any station in Great Britain.)
 CALCIUM CHLORIDE (SOLID).—£5 to £5 5s. per ton d/d carr. paid.
 COPPER SULPHATE.—£25 to £25 10s. per ton.
 METHYLATED SPIRIT 61 O.P.—Industrial, 1s. 3d. to 1s. 8d. per gall. pyridinised industrial, 1s. 5d. to 1s. 10d. per gall.; mineralised 2s. 4d. to 2s. 8d. per gall.; 64 O.P., 1d. extra in all cases.
 NICKEL SULPHATE.—£38 per ton d/d.
 NICKEL AMMONIA SULPHATE.—£38 per ton d/d.
 POTASH CAUSTIC.—£30 to £33 per ton.
 POTASSIUM BICHROMATE.—4½d. per lb.
 POTASSIUM CHLORATE.—3½d. per lb., ex-wharf, London, in cwt. kegs.
 SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia, £37 to £45 per ton, carr. paid.
 SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.
 SODA CAUSTIC, SOLID.—Spot lots delivered, £15 2s. 6d. to £18 per ton, according to strength; 20s. less for contracts.
 SODA CRYSTALS.—£5 to £5 5s. per ton, ex railway depots or ports.
 SODIUM ACETATE 97/98%.—£21 per ton.
 SODIUM BICARBONATE.—£10 10s. per ton, carr. paid.
 SODIUM BICHROMATE.—3½d. per lb.
 SODIUM BISULPHITE POWDER, 60/62%.—£17 10s. per ton delivered for home market, 1-cwt. drums included; £15 10s. f.o.r. London.
 SODIUM CHLORATE.—2½d. per lb.
 SODIUM NITRITE, 100% BASIS.—£27 per ton d/d.
 SODIUM PHOSPHATE.—£14 per ton, f.o.b. London, casks free.
 SODIUM SULPHATE (GLAUBER SALTS).—£3 12s. 6d. per ton.
 SODIUM SULPHIDE CONC. SOLID, 60/65.—£13 5s. per ton d/d. Contract, £13. Carr. paid.
 SODIUM SULPHIDE CRYSTALS.—Spot, £8 12s. 6d. per ton d/d. Contract, £8 10s. Carr. paid.
 SODIUM SULPHITE, PEA CRYSTALS.—£14 per ton f.o.b. London, 1-cwt. kegs included.

Coal Tar Products

ACID CARBOLIC CRYSTALS.—6½d. to 6½d. per lb. Crude 60's, 2s. per gall.
 ACID CRESYLIC 99/100.—2s. 3d. to 2s. 8d. per gall. 97/99.—2s. 1d. to 2s. 2d. per gall. Pale, 95%, 1s. 10d. to 1s. 11d. per gall. Dark, 1s. 7½d. to 1s. 8½d.
 ANTHRACENE.—A quality, 2d. to 2½d. per unit. 40%, £4 10s. per ton.
 ANTHRACENE OIL, STRAINED, 1080/1090.—5½d. to 6d. per gall. 1100, 6d. to 6½d. per gall.; 1110, 6½d. per gall. Unstrained, 6½d. to 7d. per gall.
 BENZOLE.—Prices at works: Crude, 10d. to 11d. per gall.; Standard Motor, 1s. 5d. to 1s. 6d. per gall.; 90%, 1s. 7d. to 1s. 8d. per gall.; Pure, 1s. 10d. to 1s. 11d. per gall.
 TOLUOLE.—90%, 1s. 7½d. to 2s. per gall. Firm. Pure, 2s. to 2s. 2d. per gall.
 XYLOL.—1s. 5d. to 1s. 10d. per gall. Pure, 1s. 8d. to 2s. 1d. per gall.
 CREOSOTE.—Cresylic, 20/24%, 7½d. to 7½d. per gall.; Heavy, 6½d. to 6½d. per gall. Middle oil, 4½d. to 5d. per gall. Standard specification, 3½d. to 4½d. per gall. Light gravity, 2½d. to 2½d. per gall. ex works. Salty, 7½d. per gall.
 NAPHTHA.—Crude, 8½d. to 9d. per gall. Solvent, 90/160, 1s. 3½d. to 1s. 4d. per gall. Solvent, 95/160, 1s. 4d. to 1s. 5d. per gall. Solvent 90/190, 1s. 1d. to 1s. 3d. per gall.
 NAPHTHALENE, CRUDE.—Drained Creosote Salts, £4 10s. to £5 per ton. Whizzed, £5 per ton. Hot pressed, £8 10s. per ton.
 NAPHTHALENE.—Crystals, £12 5s. to £14 10s. per ton. Quiet Flaked, £14 to £15 per ton, according to districts.
 PITCH.—Medium soft, 37s. to 42s. 6d. per ton, f.o.b., according to district. Nominal.
 PYRIDINE.—90/140, 3s. 9d. to 4s. 3d. per gall. 90/160, 3s. 9d. to 4s. per gall. 90/180, 2s. to 2s. 3d. per gall. Heavy, 1s. 6d. to 1s. 9d. per gall.

Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated:

ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.
 ACID ANTHRANILIC.—6s. per lb. 100%.
 ACID BENZOIC.—1s. 8½d. per lb.
 ACID GAMMA.—4s. 6d. per lb.
 ACID H.—3s. per lb.
 ACID NAPHTHIONIC.—1s. 6d. per lb.
 ACID NEVILLE AND WINTHER.—4s. 9d. per lb.
 ACID SULPHANILIC.—8½d. per lb.
 ANILINE OIL.—8d. per lb. naked at works.
 ANILINE SALTS.—8d. per lb. naked at works.
 BENZALDEHYDE.—2s. 3d. per lb.
 BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.
 BENZOIC ACID.—1s. 8½d. per lb.
 o-CRESOL 29/31° C.—5½d. per lb.
 m-CRESOL 98/100%.—2s. 3d. to 2s. 6d. per lb.
 p-CRESOL 32/34° C.—2s. 3d. to 2s. 6d. per lb.
 DICHLORANILINE.—1s. 10d. per lb.
 DIMETHYLANILINE.—1s. 11d. per lb.
 DINITROBENZENE.—8d. per lb. naked at works. £75 per ton.
 DINITROCHLOROBENZENE.—£84 per ton d/d.
 DINITROTOLUENE.—48/50° C. 7½d. per lb. naked at works. 66/68° C. 9d. per lb. naked at works.
 DIPHENYLAMINE.—2s. 10d. per lb. d/d.
 a-NAPHTHOL.—2s. per lb. d/d.
 B-NAPHTHOL.—10d. per lb. d/d.
 a-NAPHTHYLAMINE.—1s. 3d. per lb.
 B-NAPHTHYLAMINE.—3s. per lb.
 o-NITRANILINE.—5s. 9d. per lb.
 m-NITRANILINE.—3s. per lb. d/d.
 p-NITRANILINE.—1s. 8d. per lb.
 NITROBENZENE.—6d. per lb. naked at works.
 NITRONAPHTHALENE.—1s. 3d. per lb.
 R. SALT.—2s. 2d. per lb.
 SODIUM NAPHTHIONATE.—1s. 8½d. per lb. 100% basis d/d.
 o-TOLUIDINE.—8d. per lb.
 p-TOLUIDINE.—1s. 9d. per lb. naked at works.
 m-XYLIDINE ACETATE.—2s. 6d. per lb. 100%.
 N. W. ACID.—4s. 9d. per lb. 100%.

Wood Distillation Products

ACETATE OF LIME.—Brown, £9 15s. to £10 5s. per ton. Grey, £16 10s. to £17 10s. per ton. Liquor, 9d. per gall.
 ACETONE.—£78 per ton.
 CHARCOAL.—£6 to £8 10s. per ton, according to grade and locality.
 IRON LIQUOR.—1s. 3d. per gall. 32° Tw. 1s. per gall. 24° Tw. 10d. per gall.
 RED LIQUOR.—9d. to 10½d. per gall. 16° Tw.
 WOOD CRESOTE.—1s. 9d. per gall. Unrefined.
 WOOD NAPHTHA, MISCIBLE.—3s. 8d. to 3s. 11d. per gall. Solvent, 4s. to 4s. 3d. per gall.
 WOOD TAR.—£3 10s. to £4 10s. per ton.
 BROWN SUGAR OF LEAD.—£38 per ton.

Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 6½d. to 1s. 3d. per lb. according to quality; Crimson, 1s. 4d. to 1s. 6d. per lb., according to quality.
 ARSENIC SULPHIDE, YELLOW.—1s. 10d. to 2s. per lb.
 BARYTES.—£5 10s. to £7 per ton, according to quality.
 CADMIUM SULPHIDE.—5s. to 6s. per lb.
 CARBON BISULPHIDE.—£25 to £27 10s. per ton, according to quantity
 CARBON BLACK.—5½d. per lb., ex wharf.
 CARBON TETRACHLORIDE.—£40 to £50 per ton, according to quantity, drums extra.
 CHROMIUM OXIDE, GREEN.—1s. 2d. per lb.
 DIPHENYLGUANIDINE.—3s. 9d. per lb.
 INDIAN RUBBER SUBSTITUTES, WHITE AND DARK.—4½d. to 5½d. per lb.
 LAMP BLACK.—£30 per ton, barrels free.
 LEAD HYPOSULPHITE.—9d. per lb.
 LITHOPONE, 30%.—£20 to £22 per ton.
 MINERAL RUBBER "RUBFRON".—£13 12s. 6d. per ton, f.o.r. London.
 SULPHUR.—£10 to £13 per ton, according to quality.
 SULPHUR CHLORIDE.—4d. to 7d. per lb., carboys extra
 SULPHUR PRECIP. B. P.—£55 to £60 per ton.
 THIOCARBAMIDE.—2s. 6d. to 2s. 9d. per lb., carriage paid.
 THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.
 VERMILION, PALE OR DEEP.—6s. 6d. to 6s. 9d. per lb.
 ZINC SULPHIDE.—8d. to 11d. per lb.

Pharmaceutical and Photographic Chemicals

ACID, ACETIC, PURE, 80%.—£39 per ton ex wharf London in glass containers.
 ACID, ACETYL SALICYLIC.—2s. 6d. to 2s. 8d. per lb.
 ACID, BENZOIC, B.P.—2s. to 3s. 3d. per lb., according to quantity. Solely ex Gum, 1s. 3d. to 1s. 4d. per oz., according to quantity.

ACID, BORIC B.P.—Crystal, 36s. to 39s. per cwt.; powder, 40s. to 43s. per cwt.; extra fine powder, 42s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.

ACID, CAMPHORIC.—19s. to 21s. per lb.

ACID, CITRIC.—2s. 1d. to 2s. 3d. per lb., less 5%.

ACID, GALLIC.—2s. 8d. per lb. for pure crystal, in cwt. lots.

ACID, PYROGALLIC, CRYSTALS.—7s. 3d. per lb. Resublimed, 8s. 3d.

ACID, SALICYLIC, B.P. PULV.—1s. 5d. to 1s. 7d. per lb. Technical.—10½d. to 11½d. per lb.

ACID, TANNIC B.P.—2s. 8d. to 2s. 10d. per lb.

ACID, TARTARIC.—1s. 4½d. per lb., less 5%.

ACETANILIDE.—1s. 5d. to 1s. 8d. per lb. for quantities.

AMIDOL.—7s. 6d. to 9s. per lb., d/d.

AMIDOPYRIN.—7s. 9d. to 8s. per lb.

AMMONIUM BENZOATE.—3s. 3d. to 3s. 9d. per lb., according to quantity. 18s. per lb. ex Gum.

AMMONIUM CARBONATE B.P.—£36 per ton. Powder, £39 per ton in 5 cwt. casks. Resublimed, 1s. per lb.

ATROPHINE SULPHATE.—9s. per oz.

BARBITONE.—5s. 9d. to 6s. per lb.

BENZONAPHTHOL.—3s. to 3s. 3d. per lb. spot.

BISMUTH CARBONATE.—8s. 9d. per lb.

BISMUTH CITRATE.—8s. 3d. per lb.

BISMUTH SALICYLATE.—8s. 3d. per lb.

BISMUTH SUBNITRATE.—8s. 9d. per lb.

BISMUTH NITRATE.—Cryst. 5s. 3d. per lb.

BISMUTH OXIDE.—11s. 3d. per lb.

BISMUTH SUBCHLORIDE.—10s. 3d. per lb.

BISMUTH SUBGALLATE.—7s. 3d. per lb. Extra and reduced prices for smaller and larger quantities of all bismuth salts respectively.

BISMUTHI ET AMMON LIQUOR.—Cit. B.P. in W. Qts. 1s. 0½d. per lb.; 12 W. Qts. 11½d. per lb.; 36 W. Qts. 11d. per lb.

BORAX B.P.—Crystal, 24s. to 27s. per cwt.; powder, 25s. to 28s. per cwt., according to quantity. Carriage paid any station in Great Britain, in ton lots.

BROMIDES.—Ammonium, 1s. 1½d. per lb.; potassium, 1s. 8½d. per lb.; granular, 1s. 7½d. per lb.; sodium, 1s. 10½d. per lb. Prices for 1 cwt. lots.

CALCIUM LACTATE.—B.P., 1s. 2½d. to 1s. 3½d. per lb.

CAMPHOR.—Refined flowers, 2s. 11d. to 3s. per lb., according to quantity; also special contract prices.

CHLORAL HYDRATE.—3s. 1d. to 3s. 4d. per lb.

CHLOROFORM.—2s. 4½d. to 2s. 7½d. per lb., according to quantity.

CREOSOTE CARBONATE.—6s. per lb.

ETHERS.—S.G. .730—11d. to 1s. per lb., according to quantity other gravities at proportionate prices.

FORMALDEHYDE, 40%.—37s. per cwt., in barrels, ex wharf.

GUAIACOL CARBONATE.—4s. 6d. to 4s. 9d. per lb.

HEXAMINE.—2s. 3d. to 2s. 6d. per lb.

HOMATROPINE HYDROBROMIDE.—30s. per oz.

HYDRASTINE HYDROCHLORIDE.—English make offered at 120s. per oz.

HYDROGEN PEROXIDE (12 VOLS.).—1s. 4d. per gallon, f.o.r. makers' works, naked. Winchesters, 2s. 11d. per gall. B.P., 10 vols., 2s. to 2s. 3d. per gall.; 20 vols., 4s. per gall.

HYDROQUINONE.—3s. 9d. to 4s. per lb., in cwt. lots.

HYPOPHOSPHITES.—Calcium, 2s. 5d. per lb.; potassium, 2s. 8½d. per lb.; sodium, 2s. 7½d. per lb., in 1 cwt. lots, assorted.

IRON AMMONIUM CITRATE.—B.P., 2s. 8d. to 2s. 11d. per lb. Green, 3s. 1d. to 3s. 4d. per lb. U.S.P., 2s. 9d. to 3s. per lb.

IRON PERCHLORIDE.—18s. to 20s. per cwt., according to quantity.

IRON QUININE CITRATE.—B.P., 8½d. to 9½d. per oz., according to quantity.

MAGNESIUM CARBONATE.—Light commercial, £31 per ton net.

MAGNESIUM OXIDE.—Light commercial, £62 10s. per ton, less 2½%; Heavy commercial, £21 per ton, less 2½%; in quantity lower; Heavy Pure, 2s. to 2s. 3d. per lb.

MENTHOL.—A.B.R. recrystallised B.P., 20s. 6d. per lb. net; Synthetic, 12s. to 14s. per lb.; Synthetic detached crystals 12s. to 16s. per lb., according to quantity; Liquid (95%), 9s. 6d. per lb.

MERCURIALS B.P.—Up to 1 cwt. lots, Red Oxide, crystals, 8s. 4d. to 8s. 5d. per lb., levig., 7s. 10d. to 7s. 11d. per lb.; Corrosive Sublimate, Lump, 6s. 7d. to 6s. 8d. per lb., Powder, 6s. to 6s. 1d. per lb.; White Precipitate, Lump, 6s. 9d. to 6s. 10d. per lb., Powder, 6s. 10d. to 6s. 11d. per lb., Extra Fine, 6s. 11d. to 7s. per lb.; Calomel, 7s. 2d. to 7s. 3d. per lb.; Yellow Oxide, 7s. 8d. to 7s. 9d. per lb.; Persulph, B.P.C., 6s. 11d. to 7s. per lb.; Sulph. nig., 6s. 8d. to 6s. 9d. per lb. Special prices for larger quantities.

METHYL SALICYLATE.—1s. 5d. to 1s. 8d. per lb.

METHYL SULPHONAL.—18s. 6d. to 20s. per lb.

METOL.—9s. to 11s. 6d. per lb. British make.

PARAFORMALDEHYDE.—1s. 9d. per lb. for 100% powder.

PARALDEHYDE.—1s. 4d. per lb.

PHENACETIN.—2s. 6d. to 2s. 9d. per lb.

PHENAZONE.—3s. 11d. to 4s. 2d. per lb.

PHENOLPHTHALEIN.—6s. to 6s. 3d. per lb.

POTASSIUM BITARTRATE 99/100% (Cream of Tartar).—97s. per cwt., less 2½ per cent.

POTASSIUM CITRATE.—B.P.C., 2s. 7d. per lb. in 1 cwt. lots.

POTASSIUM FERRICYANIDE.—1s. 9d. per lb., in cwt. lots.

POTASSIUM IODIDE.—16s. 8d. to 17s. 2d. per lb., according to quantity.

POTASSIUM METABISULPHITE.—6d. per lb., 1-cwt. kegs included f.o.r. London.

POTASSIUM PERMANGANATE.—B.P. crystals, 5½d. per lb., spot.

QUININE SULPHATE.—1s. 8d. to 1s. 9d. per oz., bulk in 100 oz. tins.

RESORCIN.—2s. 10d. to 3s. per lb., spot.

SACCHARIN.—47s. per lb.; in quantity lower.

SALOL.—2s. 3d. to 2s. 6d. per lb.

SODIUM BENZOATE, B.P.—1s. 8d. to 1s. 11d. per lb.

SODIUM CITRATE, B.P.C., 1911.—2s. 4d. per lb., B.P.C. 1923—2s. 7d. per lb. Prices for 1 cwt. lots. U.S.P., 2s. 6d. to 2s. 9d. per lb., according to quantity.

SODIUM FERROCYNIDE.—4d. per lb., carriage paid.

SODIUM HYPOSULPHITE, PHOTOGRAPHIC.—£15 per ton, d/d consignee's station in 1-cwt. kegs.

SODIUM NITROPRUSSIDE.—16s. per lb.

SODIUM POTASSIUM TARTRATE (ROCHELLE SALT).—100s. to 105s. per cwt. Crystals, 5s. per cwt. extra.

SODIUM SALICYLATE.—Powder, 2s. 2d. to 2s. 5d. per lb. Crystal, 2s. 3d. to 2s. 6d. per lb.

SODIUM SULPHIDE, PURE RECRYSTALLISED.—10d. to 1s. 1d. per lb.

SODIUM SULPHITE, ANHYDROUS.—£27 10s. to £28 10s. per ton, according to quantity. Delivered U.K.

SULPHONAL.—9s. 6d. to 10s. per lb.

TARTAR Emetic, B.P.—Crystal or powder, 2s. 1d. to 2s. 3d. per lb.

THYMOL.—Puriss., 9s. 1d. to 9s. 4d. per lb., according to quantity. Firmer. Natural, 12s. per lb.

Perfumery Chemicals

ACETOPHENONE.—7s. per lb.

AUBEPINE (EX ANETHOL).—11s. per lb.

AMYL ACETATE.—2s. 6d. per lb.

AMYL BUTYRATE.—5s. per lb.

AMYL SALICYLATE.—2s. 9d. per lb.

ANETHOL (M.P. 21/22° C.).—5s. 6d. per lb.

BENZALDEHYDE FREE FROM CHLORINE.—2s. 6d. per lb.

BENZYL ACETATE FROM CHLORINE-FREE BENZYL ALCOHOL.—1s. 10d. per lb.

BENZYL ALCOHOL FREE FROM CHLORINE.—1s. 10d. per lb.

BENZYL BENZOATE.—2s. 3d. per lb.

CINNAMIC ALDEHYDE NATURAL.—14s. per lb.

COUMARIN.—9s. per lb.

CITRONELLOL.—10s. per lb.

CITRAL.—8s. per lb.

ETHYL CINNAMATE.—6s. 6d. per lb.

ETHYL PHTHALATE.—3s. per lb.

EUGENOL.—12s. 6d. per lb.

GERANIOL (PALMAROSA).—21s. per lb.

GERANIOL.—6s. 6d. to 10s. per lb.

HELIOTROPINE.—6s. per lb.

ISO EUGENOL.—14s. 3d. per lb.

LINALOL.—Ex Bois de Rose, 12s. 6d. per lb. Ex Shui Oil, 10s. per lb.

LINALYL ACETATE.—Ex Bois de Rose, 16s. per lb. Ex Shui Oil, 12s. per lb.

METHYL ANTHRANILATE.—8s. per lb.

METHYL BENZOATE.—4s. per lb.

MUSK KETONE.—34s. per lb.

MUSK XYLOL.—7s. per lb.

NEROLIN.—3s. 9d. per lb.

PHENYL ETHYL ACETATE.—11s. per lb.

PHENYL ETHYL ALCOHOL.—10s. per lb.

RHODINOL.—52s. per lb.

SAFROL.—2s. 6d. per lb.

TERPINEOL.—1s. 6d. per lb.

VANILLIN, EX CLOVE OIL.—18s. per lb. Ex Guaiacol, 15s. 6d. per lb.

Essential Oils

ALMOND OIL.—Foreign S.P.A., 10s. 6d. per lb.

ANISE OIL.—3s. per lb.

BERGAMOT OIL.—18s. per lb.

BOURBON GERANIUM OIL.—22s. per lb.

CAMPHOR OIL (White).—1s. 6d. per lb.

CANANGA OIL, JAVA.—11s. 6d. per lb.

CASSIA OIL, 80/85%.—6s. 3d. per lb.

CINNAMON OIL LEAF.—9s. per oz.

CITRONELLA OIL.—Java, 2s. 8d. per lb., c.i.f. U.K. port. Ceylon, pure, 2s. 4d. per lb.

CLOVE OIL (90/92%).—9s. 6d. per lb.

EUCALYPTUS OIL, AUSTRALIAN, B.P. 70/75%.—1s. 10d. per lb.

LAUENAR OIL.—Mont Blanc, 38/40%, 17s. per lb.

LEMON OIL.—17s. per lb.

LEMONGRASS OIL.—4s. per lb.

ORANGE OIL, SWEET.—19s. per lb.

OTTO OF ROSE OIL.—Anatolian, 35s. per oz. Bulgarian, 75s. per oz.

PALMA ROSA OIL.—12s. 6d. per lb.

PEPPERMINT OIL.—English, 87s. 6d. per lb.; Wayne County, 14s. per lb.; Japanese, 7s. 3d. per lb.

PETITGRAIN.—8s. 9d. per lb.

SANDALWOOD.—Mysore, 30s. per lb.; 90/95%, 19s. per lb.

London Chemical Market

The following notes on the London Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.

London, July 4, 1929.

THERE has been a steady flow of business, with little of outstanding importance to report. Prices continue firm, and one or two articles are still in rather short supply. Export trade continues to improve.

General Chemicals

ACETONE.—In good request at the firm price of £75 to £85 per ton according to quantity, and with a little more supply on the market.

ACID ACETIC continues firm and in brisk demand at £36 10s. to £37 10s. for 80% technical quality; there is still a shortage in the supplies, but the position is expected to be righted within a few weeks.

ACID CITRIC.—More business is offering, and the price rules firm at 2s. 2d. to 2s. 3d. per lb.

ACID FORMIC.—A quietly steady demand is being received, with the price unchanged at £42 per ton for 85% in free carboys.

ACID LACTIC.—Rather more business is being concluded, and the price remains firm at £43 per ton for standard 50% by weight.

ACID OXALIC.—This product is in much better request, with price firm at £30 10s. to £32 10s. per ton.

ACID TARTARIC.—An improved demand is being received, with the price firm at 1s. 4½d. per lb., less 5%.

ALUMINA SULPHATE.—There is a brisk demand, with supplies continuing short. Prices are firm at £7 15s. to £8 per ton.

ARSENIC.—Demand has been a little better, although the price is unchanged at £16 5s. per ton, f.o.r. mines.

BARIUM CHLORIDE.—Prices are again higher, with the product scarce for early delivery; the price is extremely firm at £12 per ton, ex wharf.

CREAM OF TARTAR.—There is a better demand, with prices firm at £98 to £100 per ton, for 99, 100% B.P. quality.

COPPER SULPHATE.—Price is a little easier, with a fair amount of business passing at £26 15s. to £27 per ton.

FORMALDEHYDE.—Demand has been good, and the price is steady at £38 10s. per ton.

LEAD ACETATE.—There is a fair demand, with white at £44 per ton and brown at £43 per ton.

LEAD NITRATE.—Inquiry is still inclined to be slow, although the price is unchanged at about £33 15s. per ton.

LIME ACETATE.—Demand is improving, and the product still continues in short supply; price firm at £18 per ton.

LITHOPONE.—In quiet request at £19 15s. to £22 per ton, according to quality.

METHYL ACETONE.—In good request at the unchanged price of £58 to £60 per ton, with the market firm.

POTASSIUM CHLORATE.—In steady request at £28 to £30 per ton.

POTASSIUM PERMANGANATE.—Rather a better demand has been received, with the price firm at 5½d. per lb. for B.P. needle crystals.

POTASSIUM PRUSSIAN.—Supply for near delivery is rather short, but the demand continues active, and price is firm at £63 10s. to £65 10s., according to quantity.

SODIUM ACETATE CRYSTALS.—Standard crystal quality is in rather short supply with the price firm at £22 10s. to £23 per ton.

SODIUM BICHROMATE.—In active request at 3½d. per lb., with small rebates for contract quantities.

SODIUM HYPOSULPHITE.—Photographic pea crystals continue a bright market at about £14 15s. to £15 per ton.

SODIUM NITRITE.—There is a good demand at £20 per ton.

SODIUM PHOSPHATE.—Di-basic quality is in fair demand at about £12 per ton, with tri-basic at £16 10s. per ton.

SODIUM PRUSSIAN.—The active demand continues, at the firm rates of 4½d. to 5½d. per lb., according to quantity.

TARTAR EMETIC.—There is a fair amount of business at 11½d. per lb.

ZINC SULPHATE.—Steady at £12 per ton.

Coal Tar Products

The coal tar products market still remains quiet. The benzol market, however, has suffered a decline in price, although quantities are not plentiful. The recent drop in the price of benzol as advertised by the N.B.A. is not reflected, however, in the price of solvent naphtha, which still remains at about the same price as last week.

MOTOR BENZOL is quoted at 1s. 5½d. to 1s. 6d. per gallon, f.o.r. makers' works.

SOLVENT NAPHTHA is quoted at about 1s. 2d. to 1s. 2½d. per gallon, f.o.r.

HEAVY NAPHTHA is quoted at about 1s. 1d. per gallon, f.o.r.

CREOSOTE OIL is quoted at 3½d. to 4d. per gallon on rails in the North, and at 4½d. to 4½d. per gallon in London.

CRESYLIC ACID.—The 98/100% quality remains unchanged at about 1s. 10d. per gallon, while the dark quality 95/97%, is quoted at about 1s. 7d. per gallon.

NAPHTHALENES remain firm, with an upward tendency, the fire-lighter quality being quoted at about £4 10s. per ton, the 74/76 quality at about £5 per ton, and the 76/78 quality at £6 to £6 5s. per ton.

PITCH.—Makers continue to demand 37s. 6d. to 40s. per ton, f.o.b. East Coast for September shipment and onwards, but buyers show little interest at these prices.

Sulphate of Ammonia Selling Prices

It is announced by Nitram, Ltd., that the home prices and conditions of sale for sulphate of ammonia during July will be exactly the same as those for February/June.

Nitrogen Products

Sulphate of Ammonia.—During the past week, on account of the announcement concurring with the agreement made between producers of Chilean and synthetic nitrogen that prices for nitrogenous products would be about 10s. per ton lower than last year, the market has fallen to about £8 15s. per ton f.o.b. U.K. port in single bags. Even at this price, buyers are preferring to hold off pending a definite announcement.

Home.—British producers have announced that the price and conditions of sale in the home market for July delivery will be the same as those in operation for February-June. It is anticipated, however, that there will be a large drop for August.

Nitrate of Soda.—There is very little interest in this product. As prices are being lowered for the year 1929-30 buyers are holding off.

Latest Oil Prices

✓ **LONDON, July 3.**—LINSEED OIL was firm and in good request at 20s. to 12s. 6d. higher. Spot, ex mill, £32; July, £30 15s.; August to April, £30 12s. 6d., naked. RAPE OIL was steady; crude extracted, £41; and technical refined, £43, naked, ex wharf. COTTON OIL was firm at 10s. to 20s. advance. Egyptian crude, £29; refined common edible, £34; and deodorised, £36, naked, ex mill. TURPENTINE was quiet and occasionally 3d. per cwt. lower. American, spot, 44s. 9d.; July, 43s. 6d.; and August-December, 42s. 3d.

HULL.—LINSEED OIL.—Naked, spot, £33; July, £31 15s.; August, £31 10s.; September-December, £30 15s. COTTON OIL.—Naked; Egyptian crude, spot, £30; July-August, £29 10s.; edible refined, spot, technical, spot, £33 10s.; and deodorised spot, £35 10s. PALM KERNEL OIL.—Crude naked, 5½ per cent. spot, £33 10s. GROUNDNUT OIL.—Crushed extracted, spot, £33; deodorised, spot, £37. SOYA OIL.—Extracted, spot, and crushed, spot, £30 10s.; deodorised, spot, £34. RAPE OIL.—Crushed extracted, spot, £40 10s.; refined, spot, £42 10s.

South Wales By-Products

THERE is no change in South Wales by-product activities. Conditions generally are unsatisfactory, only a few products showing activity. The demand for pitch is small, but sellers, apparently, are confident of an improvement shortly and prices, consequently, are unchanged round 34s. to 36s. per ton. Road tar has a slightly better inquiry, but prices are unchanged at from 10s. 6d. to 13s. per 40-gallon barrel. Crude tar is on offer at from 24s. to 28s. per ton, but has only a small call. Creosote is slightly more active, but is freely offered at from 3½d. to 4½d. per gallon. Motor benzol is stronger at from 1s. 5½d. to 1s. 8d. per gallon, while solvent naphtha is better at from 1s. 3½d. to 1s. 6d. per gallon. Refined tars are unchanged, both gasworks and coke oven tar having a steady, if moderate, call. Crude naphthalene is quiet round the 80s. per ton mark, while a similar remark applies to whizzed round about 100s. per ton. Patent fuel and coke exports are not satisfactory. Patent fuel quotations are:—Ex-ship Cardiff, 21s. to 21s. 6d.; ex-ship Swansea, 20s. to 20s. 6d. Coke quotations are:—Best foundry, 32s. 6d. to 36s. 6d.; good foundry, 26s. 6d. to 32s., and furnace from 21s. to 23s. per ton. Oil imports over the last four ascertainable weeks totalled 17,308,730 gallons.

Reduction in Price of Bismuth Salts

MAY AND BAKER, LTD., of Battersea, London, announce a reduction in the prices of bismuth salts.

Scottish Chemical Market

The following notes on the Scottish Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinions.

Glasgow, July 3, 1929.

THE heavy chemical market still maintains its good position, a good number of inquiries being received, both for home and export business. Prices remain practically on the same level as last reported.

Industrial Chemicals

ACETONE.—B.G.S., £76 10s. to £85 per ton, ex wharf, according to quantity. Inquiry remains satisfactory.

ACID ACETIC.—98/100% Glacial, £56 to £67 per ton, according to quality and packing, c.i.f. U.K. ports; 80% pure, £37 10s. per ton, ex wharf; 80% technical, £37 10s. per ton, ex wharf.

ACID BORIC.—Crystals, granulated or small flaked, £30 per ton. Powder, £32 per ton, packed in bags, carriage paid U.K. stations. There are a few fairly cheap offers made from the Continent.

ACID CARBOLIC ICE CRYSTALS.—Unchanged at 6½d. per lb., delivered or f.o.b. U.K. ports.

ACID CITRIC B.P. CRYSTALS.—Quoted 2s. 2½d. per lb., less 5%, ex store, spot delivery. Offered at 2s. 2½d. per lb., less 5% ex wharf, prompt shipment from the Continent.

ACID HYDROCHLORIC.—Usual steady demand. Arsenical quality, 4s. per carboy. Dearsenicated quality, 5s. 6d. per carboy, ex works, full wagon loads.

ACID NITRIC, 80° QUALITY.—£24 10s. per ton, ex station, full truck loads.

ACID OXALIC, 98/100%.—Price remains unchanged at about 3½d. per lb., ex store. Offered for prompt shipment from the Continent at 3½d. per lb., ex wharf.

ACID SULPHURIC.—£2 15s. per ton, ex works, for 144° quality; £5 15s. per ton for 158° quality. Dearsenicated quality, 20s. per ton extra.

ACID TARTARIC B.P. CRYSTALS.—Spot material now quoted 1s. 4½d. per lb., less 5% ex wharf.

ALUMINA SULPHATE.—In scarce demand and price now quoted about £7 per ton, ex wharf.

ALUM LUMP POTASH.—Unchanged at about £8 12s. 6d. per ton, c.i.f. U.K. ports. Crystal meal offered on spot at £9 per ton, ex store.

AMMONIA ANHYDROUS.—Quoted 7½d. per lb., carriage paid. Containers extra and returnable.

AMMONIA CARBONATE.—Lump quality quoted £36 per ton; powdered, £38 per ton, packed in 5 cwt. casks, delivered U.K. stations or f.o.b. U.K. ports.

AMMONIA LIQUID 88°.—Unchanged at about 2½d. to 3d. per lb., delivered according to quantity.

AMMONIA MURIATE.—Grey galvanisers' crystals of British manufacture quoted £21 to £22 per ton, ex station. Fine white crystals offered from the Continent at about £17 5s. per ton, c.i.f. U.K. ports.

ANTIMONY OXIDE.—Quoted £37 per ton, c.i.f. U.K. ports, prompt shipment from China. Spot material unchanged at about £40 per ton, ex store.

ARSENIC, WHITE POWDERED.—Unchanged at £18 5s. per ton, ex wharf, prompt despatch from mines. Spot material quoted £19 15s. per ton, ex store.

BARIIUM CHLORIDE.—Quoted £10 10s. per ton, c.i.f. U.K. ports, prompt shipment.

BLEACHING POWDER.—British manufacturers' contract price to consumers unchanged at £6 12s. 6d. per ton, delivered in minimum 4-ton lots. Continental now offered at about the same figure.

CALCIUM CHLORIDE.—Remains unchanged. British manufacturers' price £4 5s. per ton to £4 15s. per ton, according to quantity and point of delivery. Continental material on offer at £3 12s. 6d. per ton, c.i.f. U.K. ports.

COPPERAS, GREEN.—Unchanged at about £3 10s. per ton, f.o.r. works or £4 12s. 6d. per ton, f.o.b. U.K. ports.

FORMALDEHYDE, 40%.—Still in fairly good demand and price now quoted is £36 10s. per ton, ex store.

GLAUBER SALTS.—English material quoted £4 10s. per ton, ex station. Continental on offer at about £3 5s. per ton, ex wharf.

LEAD, RED.—On offer at £29 15s. per ton, ex store.

LEAD, WHITE.—Quoted £37 10s. per ton, c.i.f. U.K. ports.

LEAD ACETATE.—White crystals quoted £41 10s. per ton; brown on offer at about £39 10s. per ton, ex store.

MAGNESITE, GROUND CALCINED.—Quoted £8 10s. per ton, ex store. In moderate demand.

METHYLATED SPIRIT.—Industrial quality 64 O.P. quoted 1s. 4d. per gallon, less 2½% delivered.

POTASSIUM BICHROMATE.—Quoted 4½d. per lb. delivered U.K. or c.i.f. Irish ports, with an allowance of 2½% for minimum 2½ tons to be taken.

POTASSIUM CARBONATE 96/98%.—Spot material now quoted £26 10s. per ton, ex store. Offered from the Continent £25 10s. per ton, c.i.f. U.K.

POTASSIUM CHLORATE 99½/100% Powder.—Quoted £25 10s. per ton, ex wharf. Crystals, 30s. per ton extra.

POTASSIUM NITRATE.—Refined granulated quality quoted £19 2s. 6d. per ton, c.i.f. U.K. ports. Spot material on offer at about £20 10s. per ton, ex store.

POTASSIUM PERMANGANATE, B.P. CRYSTALS.—Quoted 5½d. per lb., ex wharf.

POTASSIUM PRUSSIAN (YELLOW).—Offered for prompt shipment from the Continent at 6½d. per lb., ex wharf. Spot material quoted 7d. per lb., ex store.

SODA, CAUSTIC.—Powdered 98/99%. Now £17 10s. per ton in drums; £18 15s. per ton in casks. Solid 76/77%, £14 10s. per ton in drums and 70/75%, £14 2s. 6d. per ton in drums, all carriage paid buyers' stations, minimum 4-ton lots, for contracts, 10s. per ton less.

SODIUM ACETATE, 65%.—Crystal quality quoted about £19 15s. per ton, ex wharf. 63/78% Anhydrous quality on offer at £20 per ton, carriage paid buyers' stations.

SODIUM BICARBONATE.—Refined recrystallised, £10 10s. per ton, ex quay or station. M.W. quality, 30s. per ton less.

SODIUM BICHROMATE.—Manufacturers advise an advance in price of ½d. per lb., making the spot price now 3½d. per lb., delivered as from July 1, with special concession for contracts from 2½ tons up to 25 tons.

SODIUM CARBONATE (SODA CRYSTALS).—£5 to £5 5s. per ton, ex quay or station. Powdered or pea quality, 27s. 6d. per ton extra. Light soda ash, £7 1s. 3d. per ton, ex quay, minimum 4-ton lots with various reductions for contracts.

SODIUM HYPOSULPHITE.—Large crystals of English manufacture quoted £8 17s. 6d. per ton, ex station, minimum 4-ton lots. Pea crystals on offer at £14 15s. per ton, ex station, minimum 4-ton lots. Prices for this year unchanged.

SODIUM NITRATE.—Ordinary quality quoted £10 12s. per ton, carriage paid, buyers' sidings, minimum 6-ton lots, usual extras for small quantities and refined qualities.

SODIUM PRUSSIAN.—Spot material quoted 7d. per lb. Offered for prompt shipment from the Continent at 6½d. per lb., c.i.f. U.K. ports.

SODIUM SULPHATE (SALTCAKE).—Prices 50s. per ton, ex works, 52s. 6d. per ton delivered for unground quality. Ground quality, 2s. 6d. per ton extra.

SODIUM SULPHIDE.—Prices for home consumption. Solid 60/62%, £9 per ton. Broken, 60/63%, £10 per ton. Crystals, 30/32%, £7 2s. 6d. per ton, delivered buyers' works on contract, minimum 4-ton lots. Special prices for some consumers. Spot material 5s. per ton extra.

SULPHUR.—Flowers, £12 per ton; roll, £10 10s. per ton; rock, £10 7s. 6d. per ton; ground American, £9 5s. per ton, ex store.

ZINC CHLORIDE 98%.—British material now quoted at £22 10s. per ton f.o.b. U.K. ports.

ZINC SULPHATE.—Offered from the Continent at about £10 5s. per ton, ex wharf.

NOTE.—The above prices are for bulk business and are not to be taken as applicable to small quantities.

"L. and N." Activities in Australia

HAVING been granted the same rights as its predecessors, the recently formed L. and N. (Tasmania), Ltd., which recently took over the assets of the Australian Shale Oil Co. at Latrobe, Tasmania, is installing a retort at Latrobe which is expected to be working next May. Mr. R. Linton, chairman of directors, recently visited the company's mine and stated that preliminary tests on the shale from the Mersey valley, in the areas controlled by the company, have been most satisfactory. These tests have been carried out in the laboratory of Sensible Heat Distillation Ltd., and by Dr. W. Cooke, of the University of Adelaide. One seam which was tested yielded 63 gallons of crude oil to the ton of shale, and another seam just over 30 gallons. It is anticipated that these two seams will be distilled together, and the yield of crude oil will approximate to 50 gallons per ton of shale distilled.

Manchester Chemical Market

(FROM OUR OWN CORRESPONDENT.)

Manchester, July 4, 1929.

EVERYTHING considered, more particularly the situation in the textile and allied industries in this part of the country, contract deliveries of chemical products are maintained on reasonably satisfactory lines. With regard to chemicals on the open market here, there is a fair volume of inquiry about considering that we are now entering on the quiet period of the year, although most of it relates to prompt and near delivery positions, and values generally are quite steady.

Heavy Chemicals

A moderate movement is reported this week in the case of hyposulphite of soda, offers of which are on a steady basis, the photographic quality being quoted at about £15 12s. 6d. per ton, and commercial grade at £8 15s. The demand for chlorate of soda continues on rather quiet lines, and quotations in this section are displaying a certain amount of easiness at from 2½d. to 2¾d. per lb. The call for both alkali and bicarbonate of soda is pretty steady, and there has been alteration in the position of prices, contract offers being on the basis of £6 and £10 10s. per ton respectively. Prussiate of soda meets with a fair inquiry, and values keep firm at from 4¾d. to 5d. per lb. As before, there is a quiet demand about for phosphate of soda, and offers of this material are about maintained at round £11 15s. per ton. Caustic soda is in fairly active demand, both against contracts and for prompt lots, the former being quoted at from £12 15s. to £14 per ton, according to quality. Sulphide of sodium is in only moderate request, but values of this material are pretty much as before, the 60 to 65 per cent. concentrated quality offering in the neighbourhood of £9 per ton and the commercial grade at about £8. There is a quiet demand about for saltcake, with current quotations ranging from £2 10s. to £2 15s. per ton. Bichromate of soda is steady at the revised rate of 3¾d. per lb., subject to discounts for quantities, and a fair volume of business continues to be reported.

There is some inquiry about for permanganate of potash, and prices are well held at about 5½d. per lb. for the commercial quality and 5¾d. for the B.P. Chlorate of potash meets with a quiet demand, offers during the past week being from 2¾d. to 3d. per lb. With regard to carbonate of potash, quotations keep fairly steady at round £26 per ton for the 96 per cent. solid quality, with buying interest on moderate lines. Caustic potash is quoted here at from about £32 15s. per ton upwards, according to quantity, and a quietly steady trade is being put through. Bichromate of potash has been moving off pretty regularly on the basis of 4¾d. per lb. Yellow prussiate of potash is in fair request, and values in this section are fully maintained at from 6¾d. to 7¼d. per lb.

There is no big weight of business passing in sulphate of copper on this market at the moment, and quotations are uncertain in tendency at from £27 10s. to £27 15s. per ton, f.o.b. Arsenic is reasonably steady at about £16 per ton at the mines for white powdered, Cornish makes, and only a comparatively quiet trade in this material is being done. Nitrate of lead is about unchanged on the week at £34 10s. per ton, with brown and white acetate at £39 10s. and £40 per ton respectively. With regard to acetate of lime, quotations are maintained at about £16 10s. per ton for the grey quality and £8 5s. for the brown, a moderate demand being reported.

Acids and Tar Products

Quotations for citric acid continue to be shaded slightly, and offers during the past week have been at round 2s. 1½d. per lb. Tartaric acid, however, seems fairly steady at about 1s. 4½d. per lb., and inquiry is about up to its recent level. With regard to oxalic acid, this material is firm, in spite of a somewhat patchy demand, at about £1 12s. per cwt., ex store. Acetic acid is in regular demand, and quotations are well held at £36 per ton for the 80 per cent. commercial kind, and £66 to £67 for the glacial.

Pitch is steady at about £2 per ton, f.o.b., and additional forward bookings are reported. Creosote oil is slow, but at round 2¾d. per gallon, at works, prices show little further change. Crystal carbolic acid is firm and in active inquiry at 6¾d. per lb., f.o.b., with crude 60's very strong in sympathy at about 2s. 1d. per gallon, naked. Solvent naphtha is steady, and in fair request, at from 1s. 2½d. to 1s. 2¾d. per gallon.

Company News

BROKEN HILL SOUTH.—A dividend at the rate of 1s. 6d. has been declared payable on August 23.

NEW TRANSVAAL CHEMICAL CO.—The company has declared interim dividends for the half-year ended December 31, 1928, of 3 per cent. (less income tax) on the cumulative first preference shares and of 4 per cent. on the cumulative "A" preference shares.

BRITISH OXYGEN CO.—The directors recommend a final dividend for the year ended March 31, 1929, of 1s. 3d. per share, payable, less income tax, to the shareholders registered on June 28, 1929, making with the interim dividend of 9d. per share, paid, less income tax, a total dividend of 2s. or 10 per cent.

DISTILLERS CO.—The profit and loss account for the year ended May 15 last, after providing for the payment of the full year's interest on the several debenture stocks, shows a balance of £2,317,411, as compared with £2,269,655 last year. Adding the balance of £212,532 brought in, there is available £2,529,943, against £2,401,958. The directors propose a final dividend of 2s. 6d. per share, less tax, on the ordinary shares, making 4s. per share for the year, equal to 20 per cent., the same as a year ago, placing £500,000 to reserve, against £400,000, bringing this fund up to £1,750,000, and repeating the allocation of £5,000 to fire insurance fund, carrying forward £227,990.

BRITISH GLUES AND CHEMICALS.—The accounts show a net profit for the year ended April 30, 1929, after providing for depreciation, bad and doubtful debts, and directors' fees, of £101,239, as compared with £51,286 for the preceding period of eleven months; with the amount brought forward there is a total of £130,725. The fixed dividend on the 8 per cent. preference shares, calls for £42,000, and the directors propose the payment of a further 1 per cent. participation on the preference shares, a dividend of 10 per cent. on the ordinary shares, against nil, and the transfer of £15,000, against £5,000, to taxation reserve account, and £20,000 as compared with nothing last year, to general reserve account, leaving £30,975 to be carried forward.

BUSSEY INTERNATIONAL, LTD.—Particulars of the company were advertised in the Press on Tuesday, for information only. The authorised share capital is £1,500,000 divided into ordinary shares of £1 each, of which 1,405,007 have been issued for cash, 800,000 being fully paid and 605,007 10s. paid. The concern was formed on June 15 to acquire licences to install, operate, use, and sell under royalty the Bussey process for the low temperature distillation of coal, shale, lignite, etc., for Great Britain and Ireland, the Colonies, and certain specified foreign countries. The company also acquires from the Bussey Low Temperature Process, Ltd., 90,000 8 per cent. cumulative participating preference shares of £1 each and 120,000 ordinary shares of 2s. each in the Bussey Coal Distillation Co., Ltd. The purchase price payable for these shares is £160,000, payable in cash.

SUDAN SALT CO.—The statutory report states that the company was registered on March 23, 1929, with a nominal capital of £250,000 in 250,000 shares of £1 each, and became entitled to commence business on April 19, 1929. The total number of shares allotted is 173,000, of which 12,500 were allotted as fully paid to vendors in accordance with terms of prospectus and 160,000 for cash. The total amount received in respect of shares allotted for cash is £79,916. Payments on capital account and otherwise to June 13, 1929, are as follow: To Sudan and sundry payments in course of company's business, £16,652; to Sudan Government, in accordance with terms of agreement, dated November 29, 1928, £10,256; to Port Sudan Syndicate, under terms of agreement dated March 27, 1929, £350; preliminary expenses £3,048; interest, exchange and general expenses, London, £96; cash at bankers and on deposit, £49,513; total, £79,916. Preliminary expenses are estimated at £3,500, of which £3,047 has been paid.

Reduction in Price of Benzol Mixture

THE ANGLO-AMERICAN OIL CO. announced this week that the price of benzol mixture was reduced by 1d. a gallon, making it the same price as No. 1 spirit; there was a reduction of 2d. a gallon on benzol. The National Benzole Co., Ltd., the distributing organisation owned and controlled entirely by the producers of British benzol, also announced a reduction of 1d. a gallon in the price of National benzol mixture.

July 6, 1929

The Chemical Age

PUBLIC LIBRARY
DETROIT MICH 47

You are at liberty

OFFICE OF CORPORATION,
CITY OF HAMILTON, BERMUDA.

10th May, 1929.

Foamite Firefoam, Ltd.,
55/57 Great Marlborough St.,
LONDON, W.1.

Dear Sirs,

* * * * *

It may be of interest to you to learn that we have had occasion to use our Foamite Engine at two recent fires. The first was on a group of Nissen Huts; two of which were practically burnt before the alarm was given, but we saved the remainder. The other fire was in a saw mill and lumber yard quite close to the main street of Hamilton. While the lumber yard was completely burned we were able to coat the next building with Foamite and so prevented the spread of the fire which threatened the main section of the City.

Our Fire Department expressed themselves as very pleased with the performance of the machine.

* * * * *

You are at liberty to use any portion of this letter as you may see fit.

Your obedient servant,

J. D. B. Talbot,

Secretary.

Portions of this letter omitted refer to further shipments.

to use this letter

Chemical Trade Inquiries

The following inquiries, abstracted from the "Board of Trade Journal," have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.1. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.

GLAUBER SALT AND SALT CAKE.—A firm of agents established in Stockholm desire to secure the representation of British manufacturers. (Reference No. 32.)

WATER TREATMENT PLANTS.—The South African Railways and Harbours, Mechanical Department, is calling for tenders, to be presented in South Africa by August 18, for the supply of water treatment apparatus for plants capable of adding measured quantities of lime to soft waters. (Tender No. 1,479.) (Reference A.X. 8,175.)

German Lacquer Production

At the annual meeting this year of the Association of German Lacquer Manufacturers of Berlin, it was decided to follow American example and promote a "save-the-surface" campaign. The association has been in existence for 30 years, but has not before engaged in promotional work of this character. The meeting disclosed that the value of lacquer production in Germany amounts from 250,000,000 to 300,000,000 marks annually from raw materials costing 150,000,000 marks. German lacquer exports increased in value from 13,000,000 marks in 1913 to 28,000,000 marks in 1928. The association stated in answer to an appeal of consumers for a reduction of price in lacquers that the industry was completely rationalised and that a further decrease in price would affect the quality. In regard to standardising the composition of lacquers, the association concluded that this practice would deter technical progress of the industry. Referring to complaints raised by lacquer producers as to competition caused by the German dye cartel in producing synthetic finished lacquers, it was suggested that the ideal solution of the matter would be for the German lacquer industry proper to co-operate with the dye cartel. (U.S.A. Commissioner, W. T. Daugherty, Berlin.)

Argentina's Chemical Industry

DESPITE reports about establishing chemical plants in Argentina in recent years, there has been no appreciable development of a domestic chemical industry during the last ten years. The annual production of chemical materials locally by private industries is approximately as follows: Sulphuric acid, 8,000 tons; muriatic acid, 1,000 tons; nitric acid, 75 tons; carbon bisulphide, 1,800 tons; a small amount of borax and Paris green. The national government produces 55° Bé sulphuric acid by the chamber process in its own plant, which has a daily capacity of 60 metric tons. An American group expects to have in operation this year a plant near Buenos Aires for the production of bone black, glue, muriatic acid and by-products. (U.S.A. Assistant Trade Commissioner Charles F. Stephenson, Buenos Aires).

Chemicals and Key Industry Duties

REPRESENTATIONS, with a view to exemption, have been made to the Board of Trade under Section 10 (5) of the Finance Act, 1926, regarding lanthanum oxide, neodymium oxide, praseodymium oxide, yttrium oxide, cerium oxide, and mercury vapour rectifiers. Any communication should be addressed to the Principal Assistant Secretary, Industries and Manufactures Department, Board of Trade, Great George Street, London, S.W.1, within one month from the date of this notice (July 3).

Industrial Chemicals Consumed in South Africa

THE industrial chemicals consumed in the Union of South Africa in 1928 assumed a total value of nearly \$3,100,000, of which over 62 per cent. was imported and the balance produced locally. Among the total of all commodities consumed were carbide, \$596,039; chemicals for assaying and smelting, \$713,998; cyanide, \$1,509,660; oxygen, acetylene and welding requisites, \$115,403; soda, \$103,169.

Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for any errors that may occur.

County Court Judgments

[NOTE.—The publication of extracts from the "Registry of County Court Judgments" does not imply inability to pay on the part of the persons named. Many of the judgments may have been settled between the parties or paid. Registered judgments are not necessarily for debts. They may be for damages or otherwise, and the result of bona-fide contested actions. But the Registry makes no distinction of the cases. Judgments are not returned to the Registry if satisfied in the Court books within twenty-one days. When a debtor has made arrangements with his creditors we do not report subsequent County Court judgments against him.]

CARL, Max, 24, Aldgate High Street, E., manufacturing chemist. (C.C., 6/7/29.) £15 16s. 4d. May 30.

WATTS, Elizabeth, Mrs., 57, Ardington Road, Abington, analytical chemist. (C.C., 6/7/29.) £11 1s. 4d. May 30.

Mortgages and Charges

[NOTE.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case, the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.]

BITMAC, LTD., Scunthorpe, distillers of oil, tar, etc. (M., 6/7/29.) Registered June 19, series of £5,000 debentures. present issue £2,000; general charge. * Nil. April 10, 1929.

Satisfactions

HORNETT, FOSTER AND CO., LTD., London, E.C., chemical manufacturers. (M.S. 6/7/29.) Satisfaction registered June 20, £4,500, registered July 23, 1903.

LAUTARO NITRATE CO., LTD., London, E.C. (M.S., 6/7/29.) Satisfaction registered June 17, £47,100, registered December 18, 1901.

London Gazette, &c.

Company Winding Up Voluntarily

HUMIDINE, LTD. (C.W.U.V., 6/7/29.) By special resolution, June 6, confirmed June 21. C. E. Smith appointed liquidator for the purpose of re-construction. Meeting of creditors at Andrew Street, and Wilson Street, Poplar, E.14, on Monday, July 8, at 1 p.m. All debts have, or will be, paid in full.

Partnership Dissolved

JENSEN, LAWSON AND CO. (Rudolph Peter JENSEN and Albert Frederick LAWSON), chemical merchants, 17, Monument Street, London, by mutual consent as from June 30, 1929. Debts received and paid by A. F. Lawson who continues the business.

New Companies Registered

ANCONA SULPHUR, LTD., 639/643, Salisbury House, London Wall, London, E.C.2.—Registered as a "public" company on June 28. Nominal capital £100,000 in 5s. shares. The objects are to acquire any mining or mineral properties, rights, and claims in any part of the world, to carry on business as miners, prospectors, and explorers; to treat ores and substances and obtain copper, sulphur, galena and other minerals, and to adopt agreements (1) with R. W. Sutton, W. E. Langton and E. J. Lake, and (2) with J. Thame.

CHARLESTOWN DYEING CO., LTD.—Registered as a "private" company on July 1. Nominal capital £1,000 in £1 shares. To carry on at Charlestown, Yorks, the business of dyers and finishers and any other business for the time being acquired or carried on by this company as a branch of the Bradford Dyers' Association, Ltd. The Bradford Dyers' Association, Ltd., are the controllers.

